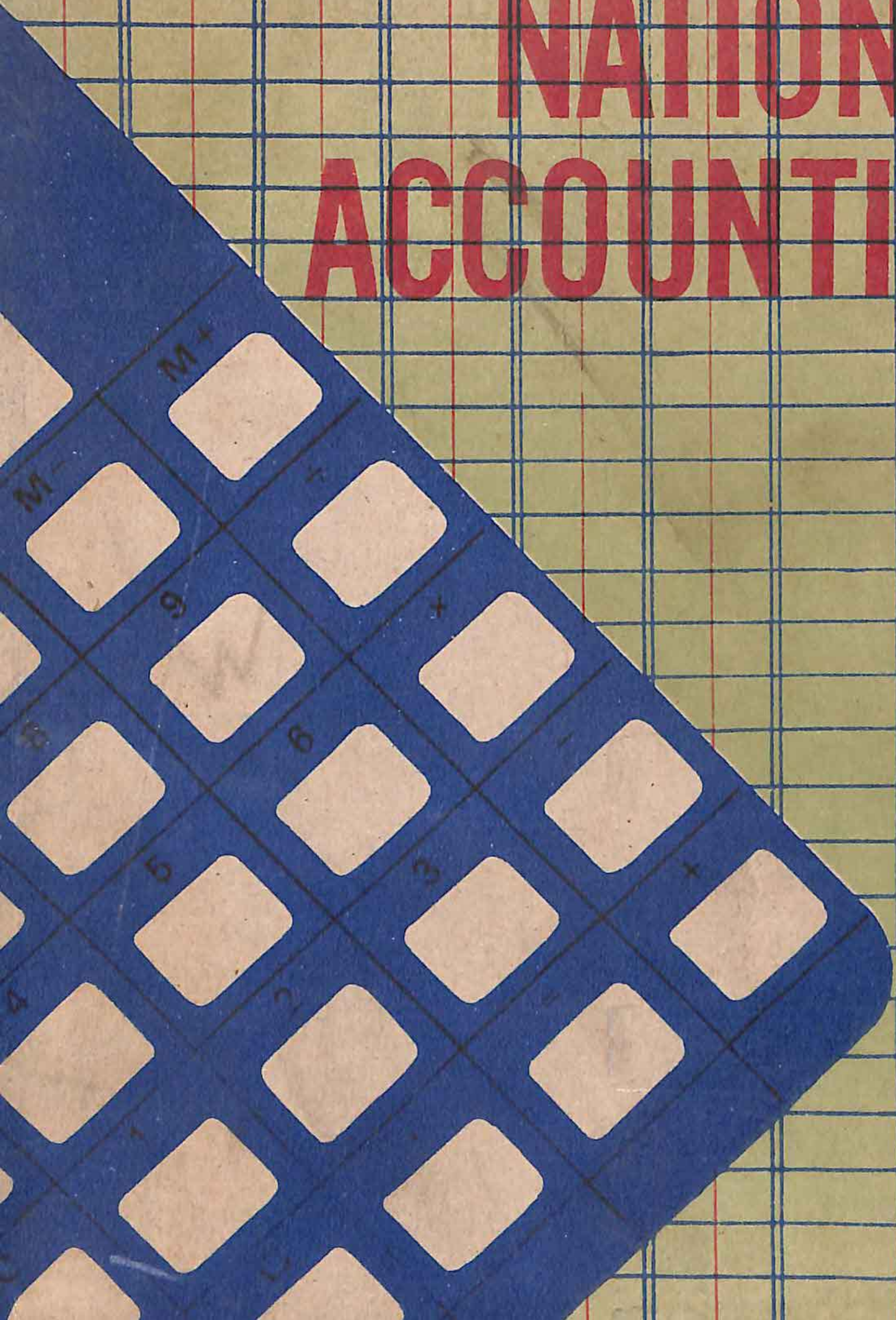
NATIONAL ACCOUNTING



NATIONAL ACCOUNTING

In India

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A Textbook in Economics for Class XII

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FOREWORD

This book follows the approach taken by the Council in developing a curriculum for Classes XI and XII.

An Editorial Board in Economics for the higher secondary stage was constituted under the chairmanship of Prof. G.S. Bhalla. The Editorial Board devoted considerable time in developing the syllabi in economics for these classes and then to the preparation of two manuscripts on the same for Class XI.

Our thanks are due to Prof. G.S. Bhalla and his colleagues—Dr. H.K. Manmohan Singh, Dr. V.B. Singh, Dr. C.T. Kurian and others—for this work.

Our thanks are due to Shri K.S. Reddy and Shri A.P. Goyal for writing this book for us in a very short time. Our thanks are also due to Shri Sudarshan Kumar Kapur of the State Institute of Education, Haryana, for rendering this book into Hindi within a very short time.

The preparation of curriculum and textbooks calls for considerable expertise and effort in planning the work; screening, reviewing and editing the book, and, finally, seeing it through the press. For all this, I am grateful to my colleagues—Shri Ramesh Chandra and Shri D.P. Jain from the Department of Education in Social Sciences and Humanities. The book would not have seen the light of the day in its present form but for the sustained work of Shri Ramesh Chandra.

Curriculum construction and development of instructional materials is an on-going process and hence every suggestion from teachers in the light of their experience would be most welcome. These suggetions would be taken into account while bringing out the revised version of this book.

SHIB K. MITRA
Director
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New Delhi
26 May 1978

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CHAPTER I

What National Income Accounting Is About ?

Every economy in the world is trying to develop as fast as it can. The rich nations are trying to grow richer and the poor nations are struggling hard to catch up with them, if possible. Of course, the main aim of the less fortunate nations is to improve the low standard of living of the people. India too entered this race in 1951 when it had launched its First Five-Year Plan.

In Class XI you have read about planning and economic development of our country. While going through the chapters on "Planning and Growth in India," you might have come across statements such as:

(a) "The actual growth of national income in the First Plan (18.4%) had been much higher..."

(b) "The actual rate of growth of national income during the second plan period was appreciably below the targets."

(c) "On account of the disastrous crop season, there was a decline in national income in 1965-66."

Summing up the growth of national and per capita income in India since the inception of planning, it was pointed out that "the goal of doubling the 1950-51 level of per capita income remains a distant dream."

The above statements highlight the importance of the concept of national income. The economic development of any country is usually expressed in terms of the growth of national income of that country. As such, this concept is considered to be the yardstick with which we usually try to measure the performance of any economy. If the national income grows at a rapid rate more goods and services would be made available to the people. This would result in the stability of prices in the market and an improvement in the standard of living of the people. On the contrary, if national income fails to grow or grows at a very low rate, shortages may be created and that may result in high prices and hardships for the poor. Hence any decline in the national income is looked upon with grave concern by all sections of the community.

National Income Accounts

Every country maintains statistics on National Income. These are usually called National Income Accounts or simply National Accounts. National Income Accounts can be defined as a set of systematic statistical statements which reflect the value of the total final output produced in the various sectors of the economy such as agriculture, industries, transport, trade, banking, etc. together with details of distribution of factor incomes among different sectors and final consumption expenditure of the economy. The methods that are generally adopted for the collection, preparation and compilation of these data would come up for discussion in the subsequent chapters.

NATIONAL ACCOUNTING

National Accounting is also one of the methods through which National Income statistics can be prepared and compiled. The system of National Accounting tries to apply the principles of Business Accounting in the calculation of National Income. Though Business Accounting is quite old, the method of National Accounting is of recent origin. It had acquired a new thrust and significance only after the publication of the book *A General Theory of Employment, Interest and Money*, in 1936 by Lord J.M. Keynes, which has brought about a revolution in Economic Analysis and Policy.

Commercial Accounting is based on the principles of double-entry system. This follows from the fact that every transaction takes place between two parties—the one who pays and the one who receives. A transaction refers to any dealing between two individuals or institutions in which a commodity or service passes from one to the other. For example, if a shopkeeper sells a packet of tea for Rs. 20/- to a customer, he would show this transaction in his books 'as a sale of a packet of tea' and 'a receipt of cash of Rs. 20/-.' From the customer's side also the same transaction can be viewed in two ways, such as 'a receipt of a packet of tea' and 'payment of cash of Rs 20/-.' In this case, there are both a 'give' and a 'take'. In this example, every transactor can be allotted an account in which his receipts are shown on the 'credit' side and his payments on the 'debit' side. The shopkeeper's account looks like this:

THE SHOPKEEPER'S ACCOUNT

Debit		**Credit**	
A packet of tea	Rs 20/-	Receipt of cash	Rs 20/-
Total	Rs 20/-	Total	Rs 20/-

Since the receipt of cash by the seller is a payment made by the buyer, the credit item of the seller would become a debit item of the buyer and the debit item of the seller, i.e. sale of a packet of tea would become a credit item of the buyer. The customer's account looks like this:

THE CUSTOMER'S ACCOUNT

Debit		**Credit**	
Payment of cash	Rs 20/-	Receipt of a packet of tea	Rs 20/-
Total	Rs 20/-	Total	Rs 20/-

The above entries on the part of the seller and the buyer represent four different aspects of the transaction.

A question now arises as to why we use the terms 'debits' and 'credits' in such accounts and not 'receipts' and 'payments.' The accountant who records the transaction is not concerned with the actual time of payment and receipt of cash. It is not the actual receipt and payment that should be recorded, but the 'liability' to pay and the 'right' to receive. If A sells goods to B, it is recorded in the accounts. The payment and receipt of cash might take, say 20 to 25 days. But the moment the transaction took place, B incurred the liability to pay A and A had acquired a credit of the amount. Hence it is not the actual payments and receipts that are recorded but 'payables' and 'receivables.'.

In the double-entry system, accounting equality is automatic because of the very nature of the method. Since two entries are made on the two sides of the account for every transaction, the two entries would be identically equal. We shall study more about them in subsequent chapters.

In commercial accounting all the transactions of a firm or company are appropriately entered on the debit and credit sides of an account. From the accounts so maintained one could get an idea of the functioning of the business firm. In National Accounting too, all transactions have to be entered in a similar way. If we look around we find that countless transactions are being conducted all the time. Firms are buying raw materials and selling their products; industries are paying wages to their workers; consumers are purchasing their daily necessities from shops; farmers are selling their produce to the traders; old-age pensions are being paid by the Government; imports are coming in and exports are going out; etc. Thus millions of transactions are conducted in a year. They have to be systematically classified and entered into National Income Accounts. The National Income Accounts so prepared would help us to understand how various transactions are inter-related and give us an idea of the working of an economy.

PRODUCTIVE AND UNPRODUCTIVE ACTIVITIES

Since our aim is to develop a framework of National Accounting for the purpose of measuring the National Income of a country, it is necessary to understand the distinction between transactions that relate to (a) productive activities and (b) other transactions. Productive activity means any type of work which contributes to the flow of goods and services in an economy. As regards other transactions there is no contribution from them either by way of goods or services. These transactions are simply means of redistributing the goods and services already produced among the different members of the economy. These are known as *transfer payments*. Examples of transfer payments are old-age pension, scholarships to students, grants to social welfare organisations. Those who benefit from these payments are not required to render any service in return for what they receive. The Government simply transfers the general purchasing power, i.e., money, to the beneficiaries. Though these examples are quite clear, there are certain transactions about which there is some dispute. For example, in the Soviet accounting system some payments made in lieu of the services rendered are treated as transfer payments. We shall know more about them in later chapters.

CLASSIFICATION OF ACCOUNTING

In commercial accounting, different accounts are maintained for different purposes. To record a summary of the transactions which are conducted in the day to day working of the organisation, a 'Trading' or 'Manufacturing Account' is prepared. This account reflects the total volume of business turnover and the consequent profit earned. The second one known as 'Profit and Loss Account' shows how the profit is charged against various expenses. The third type of account known as 'Profit and Loss Appropriation Account' shows how the net profit and other incomes have been distributed among the various interest holders of the company.

Analogous to the accounts of business companies, accounts can be prepared for the nation as a whole. For this purpose we have to classify systematically the millions of economic transactions that are taking place in the national economy. Just as business accounts show the working of the concerned business, National Accounts help us to understand the working of the economy as a whole. National Accounting is not merely concerned with the accounting relationships, but it is basically concerned with the *functional relationships* of the various transactions taking place in the economy. Therefore, classification of transactions becomes very important. This classification should enable us to answer at least some important questions which the economists and the policy-makers of a country would like to ask, such as 'How fast is the economy growing?' or 'What makes it grow and how can we get rich quicker?'

Of course, the type of classification depends upon the type of questions that are likely to be asked. For example, it is said that smoking causes lung cancer. If we are to establish a functional relationship between smoking and lung cancer, it is necessary to classify the smokers, say, into (a) heavy smokers (b) normal smokers, and (c) casual smokers. If, in our analysis, we feel that the type of smoking is also important for the disease, then the type of smoking requires sub-classification into cigars, pipes, cigarettes and bidis. Here, there is no point in classifying smoking on the basis of the prices of different brands.

All the economic activities can broadly be classified into the following three categories:

(a) **Production:** The work of producing goods and services with the help of the four factors of production, namely, land, labour, capital and enterprise is known as production.

(b) **Consumption:** It is the process of using up of goods and services that are being produced to satisfy the wants of consumers.

(c) **Investment**: This relates to the utilisation of the surplus of production over consumption to augment the productive capacity of the economy in future.

Depending upon the type of activity mentioned above, three classes or groups can be identified in an economy. They are:

(a) **Producing Sector:** It is the sector where production of goods and services takes place. It hires the services of the factors of production and produces output. Its main function is production.

(b) **Consuming Sector:** This can also be called as the *Household sector*. This sector provides factor services to the producing sector and receives income. It spends the income so received on goods and services produced by the producing sector.

(c) **Government Sector**: The Government produces as well as consumes goods and services. So, its activities cover both the producing and consuming sectors. When it hires the factor services and provides collective goods and services for the collective consumption of the community as a whole such as education, health, law and order, defence, etc., it can be called the producing sector. But when it purchases goods and services from the producing sector and when the collective goods and services are consumed by society, it comes under the category of a consuming sector. However, since the principles and policies of the Government in regard to production and consumption are quite different from the other two sectors, Government is shown as a separate sector.

These three sectors cover the economic activity of the entire economy in the sense that all the possible transactors in the economy can be brought into these three groups. The classification according to sectors here is functional in the sense that the function of the transaction is taken into consideration rather than the nature of the individual or agency involved in the transaction. For example, The Bhilai Steel Plant and The Tata Iron and Steel Company come under the producing sector because their function is the same, namely, the production of steel, even though the former is in the Government sector and the latter in the private sector.

An account can be set up for each of these three sectors that will reflect the current activity of the concerned sector. The accounts of the producing sector will reflect the productive activity of the entire economy together with the manner in which the producers distribute the income they receive from production. The accounts of the other two sectors will show the current income and expenditure of these sectors.

Even though it would be possible for us to construct a National Accounting system with these three accounts, it would be more realistic if the transactions of the economy with foreign countries and its own transactions regarding investment in machinery, and equipment are also shown in separate accounts. We shall have a detailed discussion about this at a later stage.

The National Income Accounting framework developed on the above lines would help us (1) to measure production; (2) to show the uses of production in terms of final consumption and investment; and (3) to show the type of factor income and other payments generated by the economic activity of the economy. This, of course, involves the working of building from and summarising the transactions of the individual enterprises as reflected in their own accounting records. As regards individuals, there is no single person who keeps a record of day to day transactions in the double-entry form. In such cases the accounts are to be independently estimated with the help of the data obtained from the accounts of firms or other organisations. For example, the amount of personal consumption, expenditure on food and clothing by individuals can be estimated from the total sales of textile industries and foodgrain shops. Therefore, where there are no direct accounts, indirect methods have to be adopted for the purpose so that we can have a comprehensive picture of the behaviour of the entire economy.

National Accounting is, therefore, not a mere compilation and publication of statistical information. Its purpose is to present data in such a form that accounting relationships are established as well as inter-relationships among the various sectors are more easily understood from the structure of accounts.

The essential operations in National Accounting, therefore, are as follows:

(a) Distinction between productive and unproductive activities of transactions.
(b) Classification of productive activities into groups or sectors based on their functions.
(c) Preparation of accounts in double-entry form for the various sectors which are already classified.
(d) Establishment of accounting relationships among the different sectors on the basis of accounts.
(e) Analysis of inter-relationships that exist among the different sectors on the basis of their functions.
(f) Preparation of a comprehensive statis-

tical statement for the entire economy on the basis of sectoral accounts.

Before an attempt is made in this direction, we have to understand in detail the three vital functions, namely, production, consumption and investment. To this we shall now turn.

Exercises

1. What is the difference between National Income and National Accounts?
2. What is the difference between productive and unproductive activity? Under what category, would you include the following?
   (a) pocket money given by a father to his son;
   (b) a school boy washing his father's car;
   (c) A donation of Rs 200/- given to a school; and
   (d) A school boy selling newspapers in the morning hours;
3. Discuss the need for classification of transactions? What is the basis of such classification?
4. What is National Accounting and what are operations involved ?

CHAPTER 2

Production Process

VITAL PROCESSES

We have seen in the previous chapter that National Income Accounting is concerned with the measurement of goods and services produced, i.e. production ; the use of production for final consumption and investment; and the distribution of income generated by these processes among the factors of production. Since the main aim of National Accounting is to understand the working of an economy, it is necessary to know the vital functions or essential proceses on which its working depends. For example, we know from Biological Sciences that eating, digestion and growth are vital for human survival. Without them man cannot hope to survive. Similarly, an economy cannot continue to work without the three vital processes, namely, Production, Consumption and Investment. As National Accounting deals with the measurement of these processes, it is essential to define them in clear-cut terms.

1. Production

In the day to day affairs of the economy, the term *production* is used to mean the manufacture of material goods such as foodgrains, cloth, machine tools, etc. which are tangible. Direct services rendered either by individuals or organisations, which are immaterial and intangible, are outside the scope of production. This is the definition of Production given by the most famous economist, Adam Smith. In his book '*An Inquiry into the Wealth of Nations*', he had argued that Production refers to the production of material goods only. According to him all the services whether they are most important such as the services of military personnel, doctors, lawyers, musicians or petty services such as those of sweepers and domestic servants cannot be termed as Production. While appreciating the fact that the services of these and many other people are important for human happiness and prosperity, he was of the opinion that there are fundamental differences between commodities and services. For example, production of most goods takes a long time and their consumption comes afterwards. With regard to some of them, they can be used for quite some time. They have the further advantage of being stored up and utilised whenever they are required. On the other hand, as regards direct services, the significant thing is that their production and consumption take place simultaneously. The moment they are produced they should be used. According to his definition of Production he divides workers into two groups : (a) Productive workers and (b) Unproductive workers. Productive workers are those who are engaged in commodity production and unproductive ones are those who provide direct services to the community. But his view was rejected by the economists who came after him.

In economics, the term *production* has a wider definition. In addition to the production of tangible goods. Production includes all those direct services which are bought and sold in the market. A commodity or service is not purchased by a consumer unless it is of some use to him. Only those goods and services are demanded which have the capacity to satisfy want. Therefore, all the services that are bought and sold in the market satisfy the wants of consumers in one way or the other. As such, Production can be defined as *any activity which is directed to satisfy the wants of consumers.* Not only the production of material goods and direct services, but also various services connected with the distribution of commodities to the final consumers are regarded as Production. The finished products that lie in the stocks of factories cannot be used by consumers unless they are supplied to them at a convenient place and time. In between the place of production and the final consumer, there is a 'pipeline' through which goods continuously pass. A whole chain of activities such as transport and communications, storage, wholesale and retail business are involved in marketing and distributing products. Since all of them render useful services, production includes these as well.

Physical Sciences tell us that man cannot create matter. It is a gift of nature. What he does is to work on matter and make useful goods out of it which satisfy his wants. For example, a carpenter makes a chair which is useful to us. Plain wood from which the chair is made has no use at least from the point of view of furniture. By converting wood into a chair, the carpenter has made the wood more useful in the form of a useful commodity. He has changed the form of wood and in the process, he has created utility or value. Production of material goods can, therefore, be defined as creation of utility or value. Any other activity which increases the utility or value of a commodity is considered production. For example the services of a retail shopkeeper increase the value of the goods he sells. By keeping stocks of finished products and meeting the requirements of consumers according to their convenience, he is performing a useful service, i.e., he is adding utility or value to the goods he sells. Therefore, Production is not only creation of utility or value but also additions made to it.

But the definition of Production as an activity directed to satisfy the wants of other people *through exchange* excludes all those activities which are not exchanged in the market, though they are directed to satisfy the wants of others. There are at least three kinds of work which are useful from society's point of view but do not pass through the market and by definition cannot be termed as productive. They are:

(a) domestic services done within the family by housewives and others;

(b) direct production for the use of the family such as foodgrains grown by small farmers in our country and vegetables, fruits and flowers grown in gardens; and

(c) voluntary work done by individuals or charitable organisations for its own sake or as a duty towards society.

These activities are distinguished from productive activities in the sense that they are not exchanged for money in the market. The services of housewives and voluntary organisations do not require payment. But it is not difficult to *impute* value to these services because similar work is bought and sold in the market. For example, the value of washing, cooking, cleaning and nursing children done by a housewife can be estimated from the payments made to housekeepers. Similarly, the value of fruits, vegetables and flowers produced in one's own garden can easily be known from the market. But it is inhuman to compare the services of a housewife to that of a paid servant. The love and affection with which a mother nurses her child cannot be expected from servants. So is the case with other types of *voluntary* work. The pleasure of doing such work cannot be measured in terms of money. How does one measure the pleasure a person derives from growing fruits in his own garden during his leisure time? But in certain cases direct production of commodities for the use of the family cannot altogether be excluded. Otherwise, it gives a totally false picture of the level of production. For example, in India 70% of the farmers are small. They produce foodgrains mainly for self-consumption. Since their produce fails to reach the market, by definition, it is excluded from production. But because of the special nature of the conditions prevailing in Indian agriculture, the entire produce has to be included in production.

2. Consumption

The term *consumption* is usually referred to as the process of using up of material goods by individuals to satisfy their wants. But consumption has a wider meaning. It includes services as well. It is seen that services are consumed the moment they are produced. Services too have a want-satisfying capacity in them. Otherwise, they would not be demanded in the market. In actual practice we can say that the services of a doctor are consumed the moment he attends to his patient. We can also argue that we consume houses, tables, cars, fans etc., in the sense that we consume the services rendered by them. It is worth noting here that man cannot destroy matter inasmuch as he cannot create it. When he consumes commodities, what he actually does is to destroy the utility embodied in them and in the process his wants are satisfied. The moment they are consumed, their utility or value is destroyed and the matter with which they are composed changes into some other form. Thus Consumption can be defined as destruction of utility or value.

But some times we observe that material goods are destroyed because of accidents, fires, floods, or earthquakes. Of course, the value embodied in them is destroyed without serving any purpose. Such destruction of goods and property should not be termed as consumption.

3. Investment

In any growing economy the entire production is not consumed. Production is normally higher than consumption. The surplus of production over consumption in a year is generally called Investment. The surplus may consist of different types of goods such as foodgrains, cloth, oils, raw materials, semi-finished products, heavy machines, tools, lathes, railroads, trucks and factories. All of them broadly belong to the same category, namely, Investment. Depending upon the type and purpose of the commodity for which it is produced, Investment can be divided into two groups: (a) Inventory Investment and (b) Investment in fixed capital formation.

(a) *Inventory Investment*: For the processes of production and consumption to go on without any interruption, inventory investment is essential. Inventory Investment generally refers to the stocks of goods and materials kept, deliberately or otherwise, at different points in the production pipe-line, i.e. from the factory site to the ultimate user. At the factory site, stocks of semi-finished products or 'work in progress' and raw materials to be processed are maintained. For example, some industrial raw materials like cotton, oil seeds, and jute, come from agriculture. These agricultural products are grown once or twice in a year. Keeping this in view, industries have to make their purchases and stock them so that production goes on smoothly until the next crop comes to the market. As regards finished products, the various agencies involved in the

Distributive Trade keep stocks. This enables the process of consumption to go on without any hindrance.

(b) *Investment in Fixed Capital*: This type of investment is essential for the growth of National Income. Machines, equipment, lathes, zigs, precision tools, buildings, factories come under this category. All these items are usually called *fixed capital*. They are meant for use in the production of consumer goods. The purchasers of these commodities are not the consumers. It is the industries which purchase them for the production of either consumer goods or other capital goods.

Investment in fixed capital formation can be sub-divided into two groups:

(i) Gross investment and (ii) net investment.

(i) *Gross Investment*: In the production process, fixed capital gets *depreciated* because of wear and tear, obsolescence or other incidents such as fire, earthquakes etc. But this part of the capital has to be maintained and renewed if its contribution to production and output is to remain undiminished. Out of gross investment which is nothing but the total production of capital goods produced in the year, that part of investment which is utilised to keep the community's capital stock intact, is called *replacement investment*, *depreciation investment*, or simply *replacement*.

(ii) *Net Investment*: In any growing economy the capital goods produced in a year usually exceed the requirements of replacement investment. The surplus stock of these goods is called *net investment*. This increases the stock of capital by adding more buildings, machines, railway tracks, and so on. We can also call this as *net fixed capital formation*, or simply *capital formation*. As a consequence of net investment that takes place in an economy, there would be an increase in the productive capacity of the economic system. This would result in a larger flow of goods and services in future.

Though Investment as seen above broadly consists of Inventories and fixed capital, there are fundamental differences between them. The motives and considerations that determine them are quite different. Inventory investment is mostly carried on keeping short-run considerations in view, such as the current demand, supply or the position of prices of commodities which would enable seller to make profits or not. On the other hand, investment in fixed capital is undertaken in the light of relatively long term views of the prospective demand for the particular products produced by the machinery or equipment concerned. Secondly, whereas fixed capital refers to the same type of commodities, namely, lathes, machine tools, roads and factories, the items in inventory investment go on changing from year to year. For example, if winter is light in North India, the demand for woollens may not pick up and as a consequence, huge stocks may pile up. Thirdly, investment in fixed capital is a long-run process and its impact on the economic activity would be felt after a long period. On the contrary, the level of inventories are subject to short-run demand and supply conditions. For example, if there is a sudden increase for a particular type of cloth because of a new fashion, the immediate effect would be that the stocks of this particular variety of cloth would fall as a result of increased sales both by wholesalers and retailers. Conversely, a sudden fall in demand would lead to a rise in stocks. In both the cases, it takes some time for production to be adjusted to the new level of demand, and only then will the abnormal position of inventories disappear.

4. Inter-relationship

The three vital processes, which are nothing but *three flows* are inter-related and interdependent. The aim of production is consumption. In the absence of consumption, production has no meaning. Therefore, production can be termed as a means and consumption an end. But consumption without production is also impossible. The level of production determines the level of consumption. But both these flows depend on Investment. It is the key determinant. A moment's reflection would reveal that investment too depends on the other two flows, since it is a part of production and a surplus over consumption. Thus, whichever way one looks at them, they are mutually related to one another.

Since our main concern is with production which gets recorded in the National Income Accounts, we have to know the agents or factors of production by whose efforts production flows into the market. To them we shall now turn.

FACTORS OF PRODUCTION

An understanding of the *factors of production* is important from two aspects. On the one hand, they are the cooperating elements in the production process, i.e., they are the active partners in production and on the other, National Accounting records their incomes which finally constitute National Income. The essential elements which cooperate with one other in the creation of value or in the addition of value to existing products are called the *factors* of production. The Indian farmer, for example, in producing his crops uses the natural resources of the soil, his own labour, the services of agricultural implements and his own initiative to help create agricultural goods. Production, thus, requires different factors. These are generally classified into the following categories:

(a) *Land*: This includes not only land meant for cultivation and other uses but also all other scarce *natural resources* which are a free gift of Nature.

(b) *Labour*: All those people who work for a wage or income come under this category. They sell their services for a price and this price is called wage rate. Sometimes, these two factors are also called "primary factors of production" —primary in the sense that their supplies are largely determined outside the economic system itself.

(c) *Capital*: This refers to those goods which are produced by man within the economic system itself. They are man-made and are used as means for *further production* of goods and services.

(d) *Entrepreneurship*: This is the element which binds all the other factors of production into a useful coherent purpose. The entrepreneur not only organises the other factors but also undertakes the attendant risks, uncertainties and other problems that might arise in the productive activity in an ever changing economic climate.

The factors of production can conveniently be called as *inputs* and the fruit of their productive activity as *output*. The payments made to the factors are called factor payments. Land receives rent, labour its wage, capital gets interest and the entrepreneur earns profit for the services rendered in the creation of output. These incomes are known as *factor incomes*. In actual practice the division between the factors of production is not always clear cut and the payments that are made may cover different types of contribution by the same factor. For example, the profit that a small business earns may contain the contributions of his own labour as well as capital. Therefore, part of the profit is nothing but wages for his labour and interest for his capital. In modern giant industrial corporations, it is difficult to locate an actual entrepreneur and relate the profits to his contribution. Though the concept of the different factors of production is very useful, it is not always possible to show, in most cases, separately, what these factors are.

PRODUCTION UNIT

The next step in the process of understanding the Production Process is to know what exactly is the definition of Production Unit. Any person, firm, organisation or government agency that undertakes the economic activity of creating value by combining and orgainsing the factors of production can be defined as a *Productive Unit.* As mentioned earlier, an individual or a firm who produces for the market is a productive unit. In this sense many individuals such as doctors, lawyers who have private practice are individual productive units. So is the case with regard to farmers, carpenters and hawkers who work independently for their living without being paid by any specific organisation. They are productive units by themselves. But those workers who are the employees of firms or organisations cannot be termed as productive units. These people are part of a larger productive unit where they are employed. The larger unit employs different factors of production and organises production. By definition, all productive activity in the economy is carried on by productive units and every individual is a productive unit in his own right or a part of a larger productive unit.

In every economy, different types of productive units provide different types of goods and services. In other words, they hire the factors of production and create value or make additions to it. The most familiar productive units in our country are village farmers, artisans, business enterprises, Central, State and Local governments and various other government departments and enterprises. Even State Legislatures and Parliament provide highly important services by passing legislations which cannot be done by citizens.

The analysis of production, factors of production and the productive units will now enable us to understand the Production Processes in a traditional economy like our rural India and in the modern economy of a developed country.

PRODUCTION PROCESS

Production process refers to the combination of the factors of production, utilisation of their services and resultant production of goods and services. It is a continuous process. We have seen that an economy cannot exist in the absence of the three vital flows, namely, production, consumption and investment. It is the production process which makes these flows possible. It is essential for human existence. That is why it has been going on since the dawn of the history of man and will go on till the human race exists. But the nature of the process has not been the same throughout the history of mankind. The different stages of human history were manifested by different types of production processes. But by and large, the production process had remained very simple till the middle of the 18th century when Industrialisation started in Britain.

(a) *The Nature of Production Process in a Traditional Economy*: Before the advent of the Industrial Revolution in Britain and its spread to other European and Asian countries and consequent improvements in transport and communication, every country used to have a traditional economy. The term 'traditional' is used in purely economic terms. Some important features of traditional economy are: (i) predominance of agricultural activity; (ii) organisation of production for self-consumption;

(iii) lack of specialisation on a significant scale; (ii) lack of regular production of a surplus with a view to sale; and (v) stationary technology.

The corner-stone of this type of economy is the self-sufficient village system. The main economic activity is agriculture and its allied production. But the organisation of production is mainly meant for *subsistence* or self-consumption. Though there is lack of specialization there is division of labour in the production process. For example, the caste system prevailing in India had originated from this principle. The processes of production and consumption in the self-contained village economies are usually carried on in this way. The farmer produces agricultural commodities mostly with the help of his family members. He keeps a part of it for the consumption of the family and sells the rest to his neighbours. With the proceeds of the sale, he purchases other things he needs—clothes from the weaver, pottery from the potter, wooden implements from the village carpenter, a pair of chappals from the shoemaker and so on. The weaver spends some of his time weaving his own cloth, but sells most of his produce. With the sale proceeds he purchases milk and foodgrains from the farmer, spare parts of his loom from the carpenter, pots from the potter etc. Though some sort of money is used as the medium of exchange it is mostly a *barter system*. Goods and services are exchanged among different production units through barter. Thus, production is characterised by *a system of mutual exchanges*. Though this is the typical picture of a traditional economy, there is a specialised activity in non-agricultural fields. For example, our country was famous in cotton and silk products even before the Industrial Revolution. India had a flourishing foreign trade and its products were exported to the remote corners of the world. Thus, on the one hand, production is organised for self-consumption in the villages and on the other, there are some centres of trade and commerce where production is mostly meant for the market. But the number of workers employed in the specialised activities is not very significant from the point of view of the whole economy.

The organisation of labour and other factors of production do not involve any complicated processes. The method or technique of production is simple. Technology remains stagnant. The combination and organisation of factors of production to produce a particular product is generally called *technology*. Since production in the traditional economy is mostly for self-consumption, there is no conscious effort to develop as well as adopt new technology. The old techniques and implements are used in the production process. So far as labour is concerned, hired labour forms a small part of the total labour employed in production. Production is normally carried on with the help of family labour. As such, the problem of organising hired labour is absent. In case additional labour is required, it can be had from the neighbours on the basis of mutual help. The requirement of hired labour is at the most marginal. Since traditional economies are abundant in labour supply, labour can be hired at the *subsistence wage rate*.

Thus, in a traditional economy, organisation of labour and technology is a simple affair. On the one hand, there would be plentiful supply of labour from within the family as well as outside and on the other the need for a change in technology does not arise as the objective of economic activity is to produce for self-consumption. Though the history of the erstwhile traditional economies is replete with the facts that there was surplus production for exchange in the market, it is to be noted that exchange had taken place at the village level between different communities producing different goods and between urban centres and nearby agricultural communities *chiefly through barter*. The basic objective of *subsistence production* stood as a stumbling block in the way of specialisation in agricultural activities. In the absence of this element, exchange, development of skills and technological advance became impossible. As a consequence, expansion of output and the resultant marketable surplus could not be achieved. Finally in the absence of a market, there was no incentive for producing a surplus and no scope for specialisation. Thus, the subsistence economies were caught up in a *vicious circle* of poverty.

From the point of view of National Income Accounting, three aspects of the traditional economy are relevant: (a) The type of production units, (b) the nature of production process and (c) the impact of the economic activity of production units on one another. The production units are mostly small peasant farmers, artisans, petty traders, washermen, and barbers. They come under the category of *individual production units*. In modern terminology they can be called as 'unincorporated enterprises.' Even the handicrafts enterprises which produce both for national and international markets are markedly small. The unit of production in most cases is an individual's family. Thus, the *household* sector is both the production as well as consuming unit. The role of the Government as a producer is marginal in the sense that its functions are limited to national defence, law and order and some social overhead services like education, irrigation and road transport. The modern corporate industrial and business enterprises whose main aim is to produce for exchange in the market and whose economic activity is important in the modern economies, are conspicuous by their absence.

The nature of Production Process is simple and straightforward. The goods that are produced do not require complicated machinery and skilled labour to handle them. In fact, it is the nature of goods produced and consumed that determine the level of technology and skills of the labour force. Traditional economy, being static, does not call for a change in the techniques of production, as it is caught up *in a low equilibrium trap*. The resources needed for the simple goods such as foodgrains, coarse cloth, wooden implements and leather goods are locally available and production is carried on for local needs. Thus, every year the production process continues and most of the goods produced are consumed during the same year, except for a small quantity which will be utilized for initiating production in the subsequent year. Year after year the process repeats itself with regularity unless external forces intervene either by way of improvements in social overhead facilities or expanded trade opportunities.

In a subsistence economy, since production is for self-consumption, a change in the production and consumption of an individual or a group of producers need not have repercussions on other individuals. For example, if a man works harder and builds himself a better house or produces more products for himself, he might well achieve a higher standard of living without affecting anyone else in the economy. On the contrary, today almost every individual is linked to other individuals through the goods and services he produces and consumes. Since in the modern world, production is for exchange, if an individual produces more, the quantity of output that comes for sale into the market will be changed. Others who produce the same commodity for sale will compete with the first individual. The increased supply in the market by the group as a whole may reduce the price. The buyers of the product will be able to get the commodity at a cheaper rate. There will be repercussions as well on other individuals if an individual or a group purchase more goods offered in the market. The price of the product will go up as a result of competition between the purchasers. Thus, the relationships of individuals with one another are both complementary and competitive. They are complementary in the sense that each individual depends upon others for the goods and services necessary for his existence, and competitive because every one competes with others in the market for the sale of his products as well as in the purchase for his consumption.

(b) *Emergence of Modern Economy*: Gradually the traditional economies, all over Europe specially, had given rise to modern economies. Initially the process was very slow. From the end of the 15th century till the middle of 18th Century, *Merchant capitalism* had played a significant role in the growth of overseas trade. During this period, the development of science and technology had brought about tremendous changes in navigation, ship building, weapons, domestic production and political organisation. The flourishing overseas trade with the newly discovered world and oriental countries had made some of the western economies very rich in terms of gold, silver and other precious stones. This had its effect on internal trade as well as on manufacture of commodities. The desire to earn more profits by stepping up production both for national and international markets, on the part of entrepreneurs and in the process to solve the practical problems of production induced further inventions. Thus, the new inventions made in the field of cotton textiles, iron and the steam engine found their application in solving the problems of economic production and brought about the Industrial Revolution towards the third quarter of the 18th Century. The success of the new technology which was mostly science-based had its *feed-back effect*. This had produced further technological discoveries by the first half of the 20th century such as electricity, internal cumbustion engine and industrial chemicals. These discoveries have revolutionised the techniques of industrial production. The internal cumbustion engine effected the system of transport and communications and industrial chemicals had enabled the development of new products like plastics, synthetic fibre and dye stuffs.

Modern economy has slowly emerged to its present structure over the last two hundred years. Most of the science-based technologies are *capital-using*. Therefore, capital has become an important factor of production and production has become more and more complicated. Some of the important economic features of modern economy are:

(i) Production is for the market,
(ii) Specialisation of production on an unprecedented scale,
(iii) Large scale use of capital in the production process,
(iv) The use of money and development of the money economy.

(c) *The Production Process in a Modern Economy*: As we have seen earlier, in a modern economy individuals are dependent upon one another both in regard to production and consumption in a very complicated way. Since the motive of every individual is to earn as much money income as possible through the market, i.e., production for exchange, specialisation and division of labour become essential. The main advantage of specialisation is the increased efficiency with which production is carried out and the possibility of inventions because of the repetitive nature of the work. Every individual specialises in the production of a part or sub-part of an article or commodity. But specialisation involves the use of machinery, equipment, tools, etc., on a large scale. The latter is the prerequisite of the former. As regards consumption, unlike in traditional economy, every individual depends upon a number of individuals to satisfy his wants. The goods and services he requires might need the cooperation of thousands of producers like him both within and outside the country. The purpose of this complicated system of production and exchange is very simple. Adoption of technical specialisation increases the efficiency of labour and further sub-divisions of the production process enables the entrepreneur to introduce still more efficient techniques. But the underlying purpose of this system is the same, namely, 'you do this for me, and I will do that for you.'

The underlying system of mutual exchanges between different producers is superimposed by the intricate modern industrial production processes. The introduction of money in modern economies, by obviating all the difficulties of the barter system, allows the system of mutual exchanges to go on smoothly. A producer, instead of exchanging his goods for goods, exchanges them first for money and then purchases the goods he requires with the money he has acquired through the sale of his production. This is one more factor which has enabled the process of specialisation to proceed without limit.

It is seen that the production process has become highly complicated. The extent of complication can be illustrated with a simple example. Let us take the case of the bread we have eaten today at breakfast. It was purchased by us the previous evening from the nearby shop. It might have been brought to the shopkeeper the day before from the baker. Thus, if we try to look back and try to visualise the various stages involved in the preparation of this simple piece of bread, we find that it might have taken, say, about a year or so for the bread to reach us. It was baked by the baker a few hours before. The baker at this stage might have purchased wheat flour from the flour mill some days ago. The miller in his turn might have purchased wheat from a wholesaler still a few days earlier. The wholesaler must have purchased wheat from some village farmer a month or so earlier. The farmer might have harvested his crop a month before that. Some months before the harvest was cut, the wheat must have been sown and before sowing, the land must have been ploughed with a tractor and prepared for sowing by the farmer. Thus, it must have taken a year at least from the time of ploughing till the time the bread reached our table. But this is not all.

By the above illustration, we have understood the vertical sequences in the production process. What about the horizontal sequences? In our illustration, at least at some stages, as in ploughing, milling and baking, different kinds of machines must have been used. For example, a tractor might have been used for ploughing the land. All these machines require power of one sort or the other. The diesel oil required for the tractor might have been purchased from the nearby filling station. The station in return might have got it from the marketing division of the oil company. This sets in motion the horizontal sequences in the production of oil on the one hand and the manufacture of the tractor itself on the other. Thus, every input used in the manufacture of bread will have both vertical and horizontal sequences. If we try to calculate the time for the production of all these things for the production of bread, the time taken for the manufacture of bread might exceed at least two years. A simple consumer item like bread calls for the production of huge machinery and a complicated production process. The important point to note is that for the production of millions of pieces of bread like the one we are discussing, all types of machines and tools are produced. This amply illustrates the nature of the modern production process. Depending upon the type of the commodity to be produced, the process becomes more and more complicated.

(d) *Organisation of Labour and Technology*: Along with the changes in the mode of production, i.e. from cottage production to *factory production* organisational problems have assumed great importance. Nowadays, these have become an important aspect of the system of Management Studies. Here we can discuss only the elements of management. The uninterrupted flow of scientific discoveries from the 1920s, have created a problem of acquiring new skills for handling the new machines and for development of new technologies incorporating the latest inventions. There are two aspects to the problem. On the one hand necessary skills can be acquired by workers through educational institutions specially meant for imparting technical education. On the other *in-plant* training would enable the workers to acquire the necessary skills to handle the machines. A combination of these two methods would have ideal results. This is the technical side of the problem. The human side of the problem refers to employer-employee relationship. This relates to the question of fair wages and other benefits to the workers for their contribution in the production process. Since our concern is the Production Process, the entrepreneur has to see that the right man is employed on the right job. For this purpose, the aptitudes and the skills of the workers have to be properly assessed. This calls for elaborate arrangements like aptitude tests and interviews.

The important type of production unit in modern economies is the corporate business or manufacturing enterprise. Its size differs from a small firm where 20 to 30 workers are employed to a giant organisation where thousands of employees of all types are hired. For example, in both the public and private sector steel plants in India, thousands of workers are employed. We know production is not confined to mere manufacture of tangible goods. All the other activities relating to the procurement of necessary inputs for production and those related to the supply of finished products to the final consumer are also organised by the enterprise, if its size is large. On the input side labour has to be properly organised in the *purchase wing*. As regards the actual production, the *production wing* has to be suitably manned. Lastly on the *marketing side*, in addition to transport and storage services, suitable workers have to be entrusted with advertising and other sales promotion activities. The organisation of labour and their placement in different positions calls for specialised training and expertise. There should be a team of efficient executives with a sound knowledge of the principles and practices in labour organisation. This is only an elementary outline of the problems that are to be dealt with in labour management.

The organisation of technology is much more challenging. Nowadays, technology has assumed such an importance that it is considered as a separate factor of production. Gradual application of *new techniques* in the production process over the last two hundred years has brought about changes in the original classification of the factors of production and the new factor, namely, *technology* has started claiming more and more attention from the entrepreneur. The entrepreneur knows the amounts of various inputs required to produce a given amount of output. The relationship between inputs and output depends upon the *state of technology*, at any particular time. The existing technology adopted by the entrepreneur must have incorporated the earlier inventions made in the field. The main aim of the entrepreneur being maximum profits, he would use the up-to-date technology available to him. We have to distinguish here between the concept of *technology* and *production function*. Production function refers to the technical relationship between inputs and output which tells us as to how much output could be produced by each and every set of specific inputs. It depends upon the state of technology and any change in technology brings about a corresponding change in the production function.

Again, *invention* and *innovation* are not the same thing. An invention refers to a tested combination of already existing knowledge to a useful purpose, and an innovation refers to a significant application of invention to the production processes. For example, electricity and internal combustion engine were technical inventions and their application in industrial production and transport and communications are technological innovations. Invention by itself is only a scientific fact whereas innovation is the economic fact. It is an economic fact in the sense that invention is applied in the practical problems of production. Thus, an innovation means a new technology. The new technology brings about a change in the production function wherever innovations are brought about. The advantage of the new technology is that more is produced out of a given amount of inputs or a given amount of output is produced with a lesser amount of inputs. In both cases, the result is a lowering of the per unit cost of production and an increase in the amount of profit earned.

By and large most of the modern scientific inventions to become successful innovations require heavy capital investment, both in material and in the training of the labour force. Physical capital is essential to properly channel the new invention in its application to intricate processes and an educated and highly skilled labour force is indispensable in operating highly complex machinery and production processes. Sinking huge capital and organising a skilled labour force does not ensure that the new goods produced can easily be sold in the market. The response of the consumers to the new product is unpredictable. Thus, any innovation requires entrepreneurial talents and skills to overcome a series of risks and unexpected obstacles. Again, the success of a new technological innovation does not mean that the modern entrepreneur can contiune to earn profits indefinitely. Scientific discoveries and inventions are a continuous process. New inventions mean development of new technology. Thus, in modern times the greatest risk is *technological obsolescence*. New machines make the *existing* machines obsolete. It may so happen that even before the cost of the machine is recovered in the production process, it may become technically out of date. This is the biggest challenge to the entrepreneur. Keeping all these things in view, he has to organise labour and technology.

But an invention need not always be *capital-using*. Though historically it is true that because of labour scarcity in Europe and the U.S.A. most of the technological changes were capital-using, there were also cases where *capital-saving* or *labour-using* technologies were developed. A labour-using technology refers to a new production function which uses more of labour and less of capital for a given amount of output. But their use by and large was limited in the advanced countries. The drive towards more and more automation, sophistication and precision in the production processes continues unabated. The interesting point to note is that the technologies developed in the advanced countries cannot be transplanted in the developing countries like India. In these countries, because of the scarcity of physical capital, and the abundance of labour, labour-using technologies are more relevant. Since the problem is to provide more and more employment opportunities to the growing millions, an *appropriate technology* has to be developed. Keeping in view the economic and social conditions obtaining in these countries, a new technology has to be developed which is more efficient than the old one both in the use of labour inputs and production of new types of goods. Thus, the organisational problems have to take note of the economic realities and proceed to use *appropriate technology*.

Technological changes in the past have not been confined to scientific and engineering advances only. They were all pervading in the sense that they have brought about radical changes in management methods, educational training of labour and many other fields in the services sector. The Research and Development Organisations and various technological institutions which impart new knowledge to students even in our own country are the standing examples of the efforts that are being made to evolve new techniques to increase the productivity of labour and other inputs in the production of goods and services.

The organisation of labour and technology in a modern economy, therefore, presents innumerable problems. It requires dynamic entrepreneurs with talents and skills to solve expected as well as unforeseen obstacles.

CATEGORIES OF PRODUCERS

(a) *Central Government Enterprises*: We know that the concept of the *State* has undergone a radical change during the last 30 to 40 years. The old *Police State* with its espousal of non-interference in the economic activities of man has given place to a *Welfare State* which intervenes, on a massive scale if necessary, in the production and distribution of goods and services. In a country like India, there are several Central government industrial and commercial enterprises which produce a variety of goods and services. They produce mainly for the market. Though some industrial enterprises produce some commodities for self-consumption, such as steel mills producing coal in their own mines for industrial use, their main economic activity is production for the market. For example, in our country, the share of production of these enterprises in the net domestic product of the country was 7.6% in 1973-74. As we have already seen in the previous chapter, all these enterprises come under the category of the *producing sector* irrespective of the fact that they belong to the government.

(b) *Households*: These are very important for the production process. They provide the services of the various factors of production as such the services of land and capital, entrepreneurial activity and labour services. Since their services are exchanged for money in the market they are productive. But their services are utilised in the production of goods and other services in the production units. But the other important process, namely, consumption, takes place in the households. Therefore, they are allotted a separate sector which can be called either as a Consuming Sector, or simply the Household Sector. But what about the case of small farmers who produce for self-consumption? According to our definitions, they should be included in the Producing Sector while they produce crops and should be placed in the Consuming or Household Sector while consuming their own production. The same is the case with regard to the services rendered by hired servants in the Household Sector. The people who employ them will be shown in the Producing Sector to include the services of the servants in production.

(c) *Unincoporated Business Enterprises*: Partnerships and single proprietorships of all kinds come under this category. Even our small farmer mentioned above comes in this group. But all of them are included in the 'Producing Sector' because they produce either goods or services. For example, lawyers, doctors, accountants, engineers, architects and many other people who work on their own may appear to be in the Household Sector. Since they are producers as they exchange their services in the market, they will be included in the Producing Sector and since they are individuals they will again be included in the Consuming Sector. They represent both the sectors.

Thus, we have studied the nature of production process in the traditional and modern economies, the objectives of production, the problems of organising labour and technology in production and finally the types of producers. We have seen that several types of goods are produced by different production units. But all these goods have to be classified for a meaningful study of the production process. This will be our next problem.

Exercises

1. Critically examine the concept of Production.
2. What is Investment? Bring out the difference between Gross and Net Investment and explain their significance.
3. Explain the nature of production process in a traditional economy.
4. Bring out the differences in the production process between the traditional and modern economies.
5. Explain the problems of organising labour and technology in a modern industrial enterprise.
6. What are the types of producers you find in modern economies and how do you classify them?

CHAPTER 3

Nature of Goods and Services Produced

We have studied in the previous chapter that the production of a simple item like bread involves the use of several types of machines, raw materials and power from the time the seeds are sown till the bread reaches the ultimate consumer. We have also understood that production of bread necessitates the prior production of a number of other items such as tractors, fuel, spare parts, milling machines, etc. We have further noticed that the production process is a continuous economic phenomenon. In this chapter, we shall try to understand the nature of goods and services produced in the process and see how it actually works in a given year. We have already noted that the production process in the modern economies is very complicated. We shall see how the use of money helps the smooth working of this process.

We have studied in the earlier chapter that any activity which is directed towards satisfying the wants of other people through exchange is production and our definition of production includes services as well. Now coming to commodities which satisfy human wants, we say that they are *material goods* since they can be seen, touched and be shifted from place to place. For example, all agricultural products, manufactured industrial goods, machines and buildings, are all material goods. Services of all types such as those of a teacher, doctor, accountant and advocate are called *non-material* goods since they cannot be seen, touched or transferred. As far as material goods are concerned, we can classify them into two categories: (a) Economic goods and (b) non-economic goods.

(a) *Economic goods*: They are goods which are in limited supply and hence have a price. To get these commodities, one has to work or sacrifice certain other commodities. The production of these commodities requires *scarce* resources which have *alternative uses*. For example, production of a ton of wheat requires, say, one acre of land. But the same land can be used to produce paddy or gram and land as an economic resource is very limited in supply. Since the production of wheat involves the sacrifice of the production of rice or gram, wheat can be produced only at a price, the price that is foregone in the other crops. As such, economic goods give rise to the problem of economising the scarce resources in the production process.

(b) *Non-economic or free goods*: Free goods are a gift of nature. They are unlimited in supply. Though they are highly useful, they need not be produced for human use as they are available in abundance. They can be had free of cost. It is the supply in relation to demand which determines whether a particular article is economic or non-economic. A particular piece of good which is free may become an economic commodity at a different place and at a particular period. For example, water and sand are free goods near a river; but both of them are economic goods for a person who lives far away from the river, if he wants to use them. Both the commodities have to be transported to the place of requirement and transport involves costs. As such, the concept of non-economic goods is *relative*. In cities, even air in houses and buildings is economic.

There is another and more important way of classifying goods and services which emerge in the production process. For example, in the production of bread, tractors were used to cultivate land, tankers were used to bring oil and in case wheat was imported, ships must have been used to bring wheat from abroad. Again, power was used to run the mills and wheat flour was used to make bread. Those things which were used to produce bread can be called as *Producers' goods* since they were useful in the production of bread and they could not be directly used to satisfy the wants of consumers. The bread which is the end result of the use of all these machines is the *consumers' good* since it satisfies the wants of consumers directly.

Again, consumers' goods which directly satisfy our wants can be classified into two categories according to the time taken for the process of consumption. (a) Single-use consumers' goods and (b) durable-use consumers' goods. Single use consumers' goods are those which are used up in a single act of consumption, for example, bread, milk, tobacco, fuel, matches, writing paper, etc.. Services are also similar in character. The moment they are produced they are consumed in one single act. On the other hand durable consumers' goods are those which can be used by us for a considerable period of time. Houses, furniture, clothes, bicycles, radios, cars etc., are some examples of these goods.

Producers' goods, as we have seen above, are those goods which help in producing further goods. These goods can be visualised as several stages in the manufacture of consumers' goods. Some producers' goods produce some other producers' goods which in turn produce consumer goods. For example, steel mills in India produce machines and these machines in turn are used to produce either goods or services. Heavy Electricals Limited (India) manufacture high voltage transformers. These transformers are purchased by various State Electricity Boards for supplying electricity to rural and urban areas. But one thing should be borne in mind. Ultimately all the producers' goods help in producing consumers' goods directly or indirectly. In general, it can be said that the consumers goods are the end of the whole production process and producers' goods are stages on the road towards it. Producers' goods can again be classified into (a) single-use producers' goods and (b) durable-use producers' goods.

(a) *Single-use producers' goods*: We know that certain goods are used up in a single act of consumption. There are also certain goods which are used up in a single act of *production*. This means they have passed on to the next stage in production. For example, raw cotton passes on to the next stage in the process of cloth manufacture when it is processed and converted into thread. So is the case with many other industrial raw materials. When they are used they lose their original shape, colour, quality etc.. Other examples of single-use producers' goods are wheat, flour, oil, electricity and coal. It is interesting to note that certain commodities can be called either as single-use producers' goods or single-use consumers' goods depending upon their use. For example, coal and electricity used for heating and lighting in a house are single-use consumer goods, whereas, they are single-use producer's goods in a factory.

(b) *Durable-use producers' goods*: Capital goods of all types which are long lasting and which are used over a long period of time to produce goods and services for *exchange* come under this category. Machinery, buildings, factories, ships and tractors, are some examples of this category.

The significant point to note about this classification is that while the demand for single-use goods is pretty regular and can be predicted in advance, the demand for durable goods is quite irregular and uncertain. This poses difficulties for those who undertake production of the durable goods. This may create the problem of unemployment in the industries which produce durable-use goods when the demand for them is sluggish. This may again spread to the industries producing single-use commodities. Thus, the entire economy may find itself in a state of depression, i.e., low production, low prices and low employment. These problems are discussed in the Theory of Trade Cycles — a separate branch of Economics.

WORKING OF THE PRODUCTION PROCESS

We have seen that production, consumption and investment are the three vital flows which continue indefinitely and go on forever. If we look around we find that all the production units are busy producing something or the other. On the other hand, households are busy supplying factor inputs and consuming various goods and services. The Producing Sector is also busy replacing its worn out machinery with the latest machines available in the market. Thus, the production process repeats itself endlessly. For the economy as a whole the three flows are carried on simultaneously. *The continuous process of economic activity which enables the flow of goods and services and their use for the satisfaction of human wants is termed as the working of the Production Process.*

In the last chapter, we have studied that at every stage in the production of a piece of bread a number of people were engaged with different types of tools such as machinery, ovens, milling machines, transport equipment, tractors and threshers. Many more workers were busy in the vertical and horizontal sequences which involve the manufacture of tools, machines etc. It is obvious from this illustration, that the production of any commodity involves the *co-operation* of hundreds of thousands of people though a single worker in the entire process, performs only a small operation. If anything goes wrong at any stage in the process of production, the whole process gets disrupted.

If we examine the working of an economy we observe that there are three main sectors, namely, agriculture, industries and services. The three are inter-dependent. They depend upon one another not only for the inputs they require to produce commodities but also for the output they have produced. For example, agriculture supplies raw materials, such as raw cotton, groundnut and other oilseeds, tobacco, etc. to the industrial sector and inturn demands finished products like cloth, oils, soaps and cigars from the industries. Industries, thus, depend upon agriculture both for inputs and output. Similarly, agriculture depends on industries for its inputs such as fertilizers, agricultural tools and seeds and for the sale of its output which becomes raw material for the industries. These two again depend on the services sector for the various services needed such as transport, banking, insurance, communications and education. The Services Sector has to depend upon them for the goods they produce. So far as agricultural raw materials are concerned, unless the agricultural sector produces enough raw materials, the production of commodities based on agriculture may be hampered. Similarly, consumers will get commodities only if the transport system cooperates with producers. Consider a situation in which transporters go on strike *en masse*. Then neither would he producers get raw materials nor the consumers get the commodities they require for consumption. Therefore, the production process is in the form of a chain reaction and can work continuously only if all the different parts of the production process cooperate with one another without any break,

It is very difficult to study the working of the production process during a continuous and indefinite period of time. Let us, therefore, fix a particular period of time—a year, say 1977, to study the working of the process. It is just like a film roll which has been unwound and we have cut out a particular section of the film. It means putting a spotlight upon this particular year leaving everything before and after it.

At the beginning of the year 1977, some stock of goods consisting of producers' goods and consumers' goods will be there in the economy. These goods are inherited from the previous year. They are the result of production carried on partly in the previous year and partly in the earlier years. Among the goods inherited from the previous year, the durable-use goods will be predominant. The durable-use consumers' goods will include the houses in which people live, the furniture they use, the radios and TV they use, the clothes they wear and so on. The durable-use producers' goods will include the factors—machinery and equipment, roads, railways, ships, aeroplanes and all other tools and implements that are available in the economy for use in the production process in the year 1977. The single-use producers' goods which are inherited from the past will include the stocks of raw materials and goods in process that are still unfinished. The single-use consumer goods will include such things as foodstuffs and all other finished goods like soaps, oils, creams of various types, etc.. Land and other natural resourees are also availabe for use in the year 1977.

This is the position at the beginning of the year. As the wheel of time starts turning, the wheel of production also begins to operate in the economy. The goods lying in the shops are sold to consumers and are replaced by new goods. Goods under process are converted into finished goods by performing various needed operations: The labour force of the economy working on land and capital—machines in the factories, raw materials, etc. will produce new goods in the year 1977. With the working of the production process in the year under consideration, all kinds of goods—durable-use consumers' goods, single-use consumers' goods, durable-use producers' goods, single-use producers' goods—will be produced. As a result of this, a stream of new consumers' goods are being used up and new single-use producers' goods pass into consumers' goods. Most of the single-use producers' goods, produced during the year, would have been converted into the finished consumers' goods and consumed during the year itself. Such producers' goods which are produced during the year and used up in further production within the year do not reckon as part of the year's output. They are taken to be included in the consumers' goods of which they are the materials. For example, wheat and cotton produced during the year have been used up in making bread and cloth respectively. The value of wheat and cotton will be included in the value of bread and cloth. If we count the value of wheat and cotton as well as that of bread and cloth in the year's production, we will be committing the mistake of *double-counting*. There will be some producers' goods left over at the end of the year just as there were producers' goods left over to this year from the previous year.

The durable-use producers' goods inherited from the previous year will undergo some depreciation but for the most part will be left over at the end of the year 1977 and will be available for use in the production process during the future years. Durable-use consumers' goods will also undergo some wear and tear in the process of consumption (particularly houses), but most of them will be available for use in the future years. The working of the production process during the year 1977 for the economy as a whole can be evaluated by comparing the amounts of various kinds of goods at the end of the year with those at the beginning.

The production process during the year can, therefore, be described in a summary in the following way. At the beginning of the year, there exists a certain stock of goods consisting of single-use, durable-use producers' and consumers' goods (all the four kinds) which may be called *Initial Equipment* or Capital. During the year the initial equipment is worked upon by the labour force and there is produced from it a flow of goods (again of all the four kinds). The equipment which exists at the end of the year 1977 becomes the initial equipment for the next year. It equals the initial equipment of the first year *plus* the new equipment which has been added *minus* the using up of the equipment which has taken place during the current year. All this can be put in the form of a table. Figure 3.1 shows this.

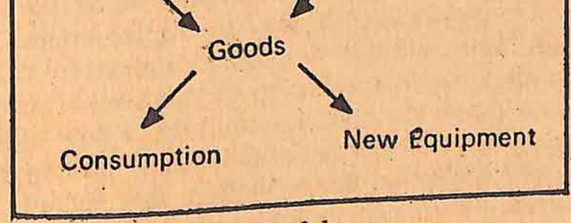

Fig.3.1

The table, as it stands, is not quite complete. There are two more important things to be added. In the first instance, services (non-material goods) have been left out of account and as we have seen, Adam Smith left them out as well. Since we are not going to follow Adam Smith, we have to see how services can be fitted into this table. We can do it very easily, if we include them as part of the consumption of the year. Secondly, the durable-use consumers' goods which are included in the initial equipment and do in fact form an important part of it have also to be included. Take, for example, houses. The houses which exist at the beginning of the year in any economy will be used for the whole year and will further be used in future also. People pay rent for using the house as they pay for other goods for consumption. So we should reckon the use of house-rent as part of the consumption of the year and, consequently, as part of the production of the year. The same arguments can be put forward for other durable-use consumers' goods such as motor cars, radios, furniture, etc. But, by and large, houses are very frequently

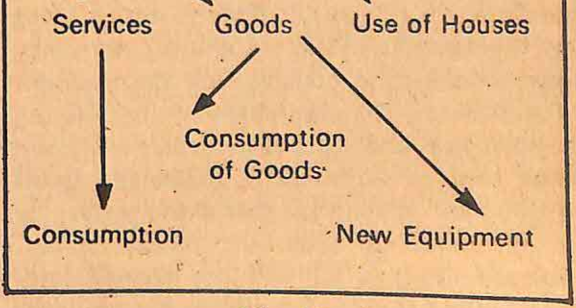

Fig. 3.2

money that occur in the functioning of a closed economy with no savings and no role of the government. But in actual life, in every economy savings are made by the households and the producing enterprises, and the government receives income by way of taxes and spends it. The country will have trade relations with the outside world. We shall introduce these complications into the money flows step by step.

(a) *Introduction of Savings* :

We know that both, the households and producing enterprises, save money. Households save; they do not spend the whole income on consumers' goods and services. They save to meet contingencies, to make assets, to purchase the durable-use consumers' goods, etc. On the other hand, the producing enterprises also save ; they do not, as a matter of fact, distribute among shareholders all the profits made by them. They keep part of the profits to meet the cost of depreciation, to expand the size of the production unit and to make a reserve fund. We assume that all the savings, whether by households or by producing enterprises, pass straight into the *capital market*. Here, capital market means all the financial institutions such as banks, insurance companies and finance houses. (Here we assume that there is no hoarding of savings). The producing enterprises directly use their savings for buying machines. But for the sake of simplicity we shall assume that their savings reach the capital market first and then the enterprises borrow them for investment purposes. (No borrowing for private consumption is allowed.) The flows of money in this position would be as shown in Figure 3.4.

The figure makes it clear that the entire money income received by the households is not spent, but a part of the income is saved which goes to the capital market. This is known as household savings. Thus, money flows from the households to the producing enterprises through the capital market. Similarly, the producing enterprises are supposed to deposit their savings in the financial institutions such as banks which are a part of the capital market. Thus, money flows from the producing enterprises into the capital market. Savings so accumulated in the capital market are

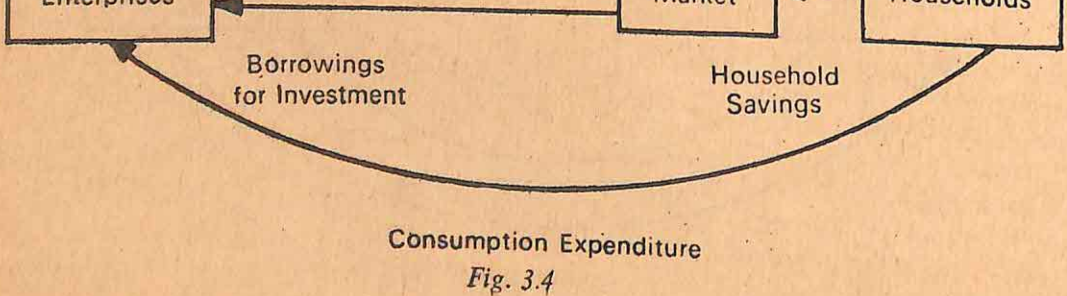

Fig. 3.4

borrowed by the producing sector for increasing its productive capacity, which makes the money flow from the capital market to the producing enterprises.

The condition for the flow of money to continue at the same level, so that the total production and subsequent purchases of goods and services may be available at constant prices, is that the inflow of savings into the capital market should be equal to the outflow of money, i.e., borrowings for investment from the capital market. In other words the savings must be equal to investment. If savings are more in the capital market than the outflow from the capital market, then the total stock of goods and services will not be demanded at the prevailing prices. Then the prices will fall, leading to a fall in income, output and employment ; which in turn will contract the flows of money. Contrary to this, if the outflow of money from the capital market is greater than the inflow, then the prices will increase, which in turn will increase income, employment and output. Consequently, the flows of money will expand.

It is evident from the discussion that the flows of money will continue at the same level when savings are equal to investment. In capitalist economies, saving is mostly done by the households and investment is made by the producing enterprises. Since decisions to save and invest differ and these decisions are taken independently by different sectors, savings and investment tend to be unequal. As a result, fluctuations in income, output and employment will arise. So governments take corrective as well as preventive steps for the steady flow of money in the economy.

(b) *Introduction of Government Sector*:
In every country we find that the government plays an important role in economic activities. If we include the government sector, our model will be nearer to reality. The government gets revenue from various sources and spends it on various heads. It gets revenue mostly from taxes. The government gets revenue from two sources —personal taxes and taxes on producing enterprises. If personal taxes are represented by T—1 and taxes on producing enterprises by T−2, then the total tax revenue (T) collected by the government will be equal to $T-1+T-2$, i.e., $T=T-1+T-2$.

On the other hand, the government spends money so obtained on various heads; the government pays money to the households when it buys the services of the households (G.1); the government pays money to the producing enterprises (G.2) when it buys the goods produced by them; the government pays to households transfer payments, viz., old-age pensions, scholarships, etc. (G.3); the government also gives some subsidies to certain producing enterprises in order to boost up their production (G.4). If the total expenditure of the Government is G, then

$$G=G.1+G.2+G.3+G.4.$$

The flows of money can be depicted by Figure 3.5

The figure is self-explanatory. It is clear that the total income of the government is T and total expenditure is G. If $(T-G)$ is positive, that is, income is more than expenditure, then saving will be done by the government. The government savings will flow to the capital market. If $(T-G)$ is negative, i.e., income is less than expenditure, then government has to borrow from the capital market, and, therefore, the flow of money will be from the capital market to the government. In Figure 3.5; we have shown one flow from the capital market to the government and the second flow from the government to the capital market. But in actual practice there will be only one flow, either from the capital market to the government sector or from the government sector to the capital market depending on the value of $(T-G)$.

rented out by their owners, while motor cars, radios, TVs, etc. are bough toutright. Therefore, only the services rendered by houses are included in the productive process. The table, after inclusion of both, services in general and the services rendered by houses, will be as in Figure 3.2.

PRODUCTION FOR SELF-CONSUMPTION

As we have seen above, the production process is a continuous process; production goes on round the clock. We have already learnt, in the previous chapter, that its nature is different in different types of economies. For example, in a traditional economy, we have seen, production is carried on mainly for self-consumption. The type of goods produced are usually single-use and durable-use consumers' goods. Even in modern economies, depending upon the types of commodities produced and the sector where they generate, we can see production for self-consumption and for exchange going on simultaneously. For example, most of the Indian farmers produce agricultural commodities for their own consumption. In the industrial sector, production is mainly for exchange, and only a very minor part of the total production is kept for self-consumption. For example, a shoemaker does not consume all the shoes he makes.

PRODUCTION FOR EXCHANGE & FLOWS OF MONEY

Modern economies are exchange economies. Everyone of us depends upon innumerable people in one way or the other to earn a living and to get goods and services to satisfy our wants. Specialisation and exchange are the predominant features. To facilitate exchange, money was invented and since then money continued to be used as a medium of exchange. Commodities and services are sold in the market by the owners and in return they receive money. With the money so received they demand commodities and services for private consumption. That is to say, people offer their services to the producing enterprises to participate in the task of production and receive payments. These persons are called the *producers*. In another capacity, these are the *consumers* of goods and services produced in the economy. So, to purchase the goods and services, these persons have to pay to the producing enterprises. It is worth mentioning here that the consumption of goods and services produced in the economy is done by the entire population; whereas production is carried out only with the help of the working population which does not include children and old people. To make our analysis simple and to understand the flows of money we assume that the producers are also the consumers. In every economy there are *households* on the one hand and *producing enterprises* on the other. The households supply productive services to the enterprises and the latter in return supply goods and services to them for consumption.

In one direction, productive services flow from the households to the enterprises and manufactured goods flow from the producing enterprises to the households. This is called the flow of goods and services or *real flows*. In everyday life, we find persons working in various farms, firms, factories and other units of production, and in turn they get payments in the form of money from the producing enterprises. The enterprises make available to the people various types of goods and services such as foods, cloth, sugar, steel, postal services and banking services which have been produced by them. The households purchase the goods and services with the help of money which they receive as payments for their productive effort. Thus, we have a flow of income payments from the producing enterprises to the households as factor payments and, consequently, a flow of money starts from the households to the productive enterprises due to the fact that money is spent by the households on the purchase of goods and services produced by the enterprises. These flows can be shown in the following figures.

The upper half of Figure 3.3 shows the productive services such as land, labour, capital and enterprise flow from households to producing enterprises as indicated by the arrow marks and payments such as wages, rent, interest and profits for factors flow from the producing enterprises to households. Similarly, in the lower half of the figure, the goods and services (real flows) flow from the producing enterprises to households, while money flows from households to producing enterprises as consumption expenditure on goods and services. Thus, we see that money flows from producing enterprises to households as factor payments and then it flows from households to producing enterprises. This flow of money is also a continuous process. It may be pointed out here that the volume of the flows of money will not always remain the same. It may change according to the changes in the level of output of the economy.

The figure below, of the flows of money, is in a very simplified form because it is based on certain assumptions which we made to understand the central issue involved and to make the analysis simple. The assumptions are:

(a) People spend all their incomes and do not save at all.

(b) The producing enterprises distribute the entire income in the form of factor payments and do not save at all.

(c) The producing enterprises produce only for household consumption. They do not produce for others. They do not pay any taxes to the government.

(d) The households and producing enterprises neither export nor import anything. Thus, the economy does not have any trade with the rest of the world.

In fact, we have explained the flows of

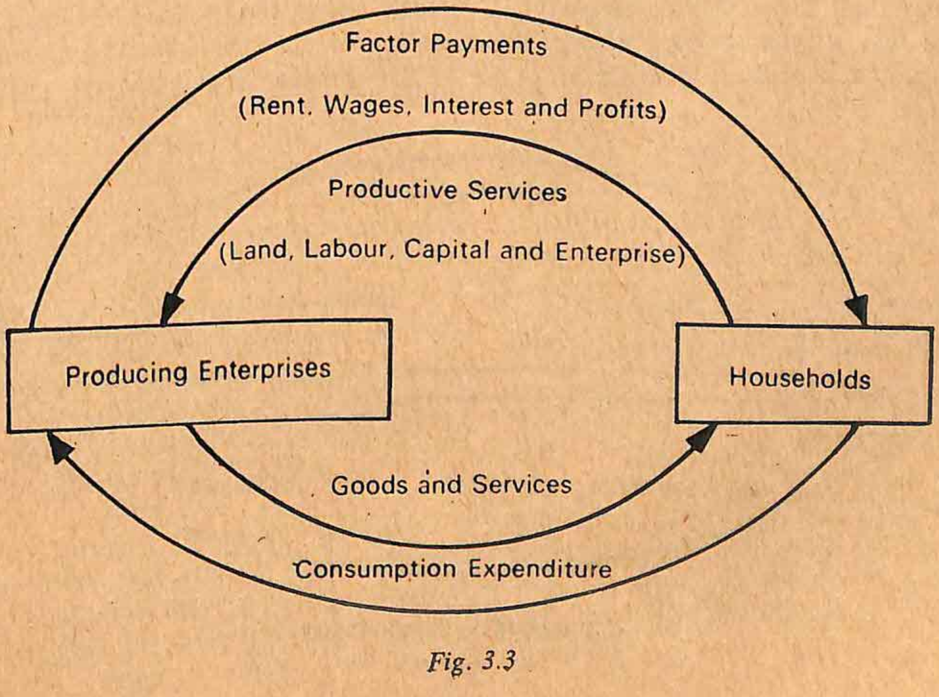

Fig. 3.3

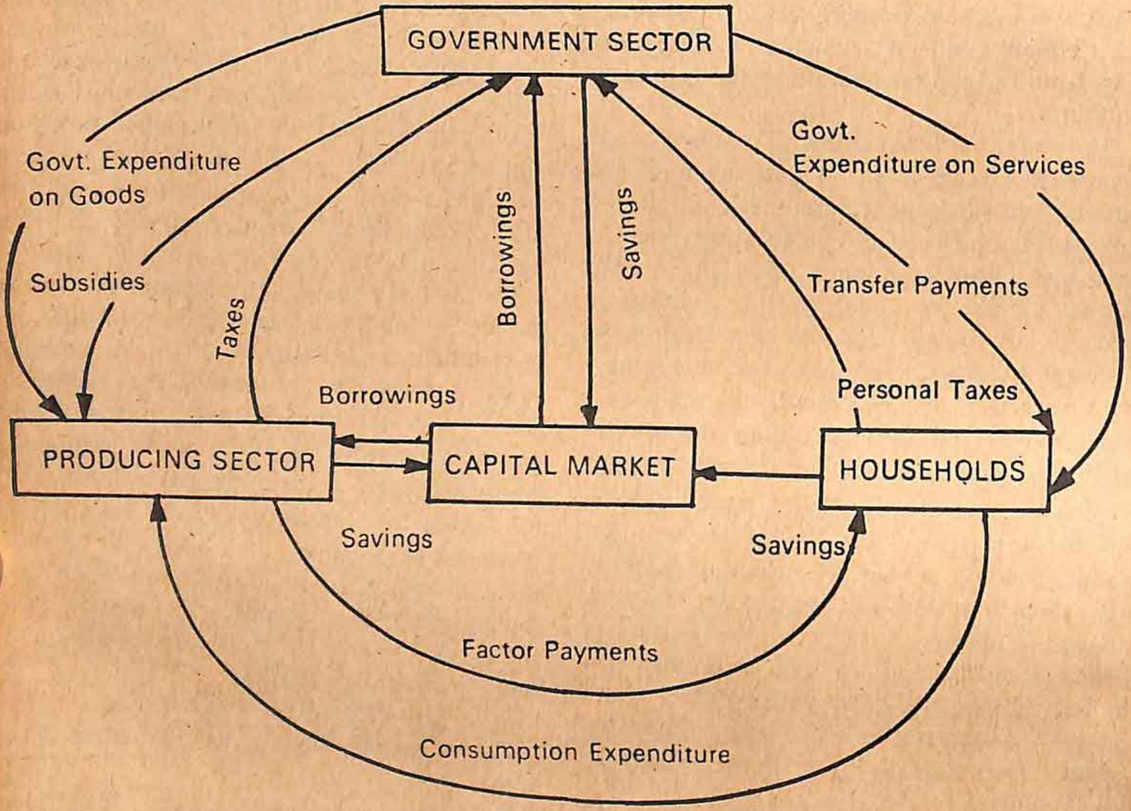

Fig. 3.5

(c) *Introduction of Foreign Trade*:

Till now, we have studied the flows of money in a closed economy. But nowadays, every economy is open—may be less or more, depending on the level of foreign trade. Every economy exports to some countries and also imports from some others. We assume that the households have no direct dealings with the rest of the world. When exports are made, the payments will come from the rest of the world, i.e., the flow of money will be from the rest of the world to the exporting country. Similarly, when imports are made payments have to be made. Then the flow of money will be from the country to the rest of the world. International trade is also carried on, on government account. That means there will be two flows—one representing international payments received on government account and the other representing international payments made on government account. If exports are represented by X and imports by M, then the net inflow or outflow of money can be obtained by (X−M). If (X−M) is positive then there will be a net inflow of money into the country and if (X−M) is negative, then there will be a net outflow of money from the country.

The flows of money have great significance in measuring national income about which we shall discuss in the subsequent chapters. On the basis of the above discussion, we can understand the various branches and sectors of

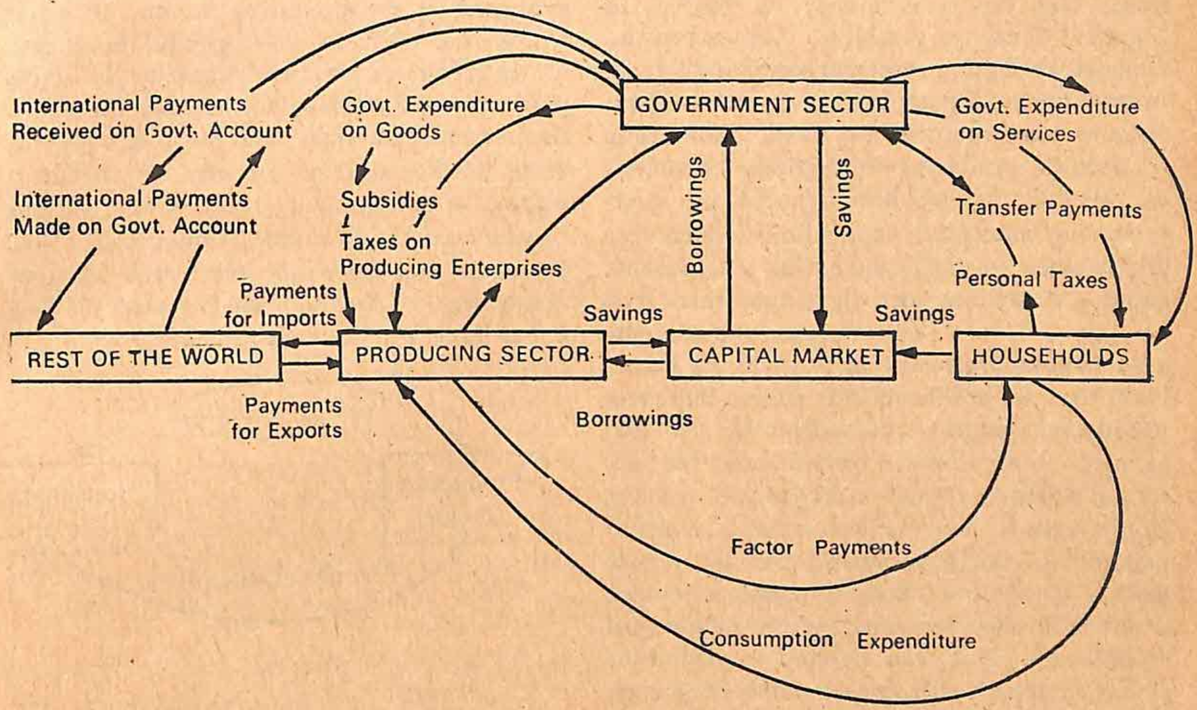

Fig. 3.6

the economy and their relationship with each other.

DEMAND OF INTERMEDIATE GOODS FOR FURTHER PRODUCTION

As we have discussed in the production process a producer has to use many other goods and services for producing a single commodity. All such commodities which are required for further production are termed as intermediate goods. Most of these goods are single-use producers' goods as they lose their identity in the production process in one single act of production. For example, we know that a producer will demand various parts and components to assemble a bicycle, such as wheels, tyres, tubes, chain, seat, handle, frame and nuts and bolts of various sizes. All these parts and components might have been produced by other producers using various inputs. The production of these inputs also require certain other intermediate goods. Ultimately, everything that is required for the production of a bicycle is produced from iron and steel, rubber, chemicals, etc. The nature of intermediate goods depends on the final output. If the final output is a simple one then the intermediate goods required for its production will also be simple. On the contrary, if the goods to be produced are very sophisticated and complex, then the intermediate goods required will also be very complex. For example, a chair can be produced with logs of woods which are in the form of strips; but for producing a computer, various sophisticated implements, parts and components are needed.

Every producer has to make payments to other producers for the intermediate goods which he requires for further production. Such payments are termed as intermediate transactions. The flows of money as shown in Figure 3.6 are very simple, even when we included savings, government sector and foreign trade. In actual practice, it is more complex. Here we have ignored the direct relationship between the producing enterprises themselves. In other words, we have ignored the inter-producing enterprise transactions which are taking place in the economy for intermediate goods. If we consider that, too, then it is possible to draw a huge diagram (or compute a huge table) distinguishing not only all households from all producing enterprises, but every producing enterprise from each other, so that detailed information can be had about the payments which everyone makes to and receives from everyone else, as well as to (and from) households, the government, and the outside world. The inter-industry transactions provide the most detailed summaries of the anatomy of an economy. They can be used to predict the effects upon each industry separately of changes in demand for particular kinds of goods.

PRODUCTION BOUNDARY

So far we have studied how the production process works in an economy and in this process how different types of commodities and services are produced for self-consumption and for exchange. To distinguish between the different types of goods meant for further production, i.e., intermediate goods from finished goods for sale to consumers and between the value of output and income generated in the process of production, we shall make use of a concept known as *Production Boundary*.

We are already familiar with Figure 3.7 which follows. The left hand block of the figure represents the producing sector which represents the economy from the point of view of its productive activity. The right hand block is the consuming or Household sector which represents the economy from the point of view of its activities as consumers of the final output produced by the producing sector. In other words,. the left hand block groups the citizens of the economy in their capacity as active producers who receive incomes for their production and the right hand block groups the same people in their capacity as ordinary citizens spending their incomes on various private needs, such as food, clothing, etc. *The production boundary is the line round the producing sector.* Anything which crosses the line, either leaves or enters the producing sector.

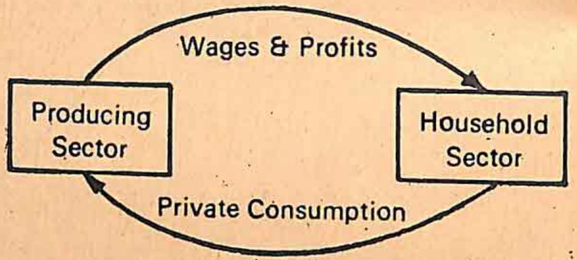

Fig. 3.7

The arrows drawn in this diagram show the flow of money in the economy. The real flow, i.e., the flow of goods and services will be in the reverse direction. Suppose in this economy, the final expenditures by consumers are Rs 1000, then the total wages and profits will also be Rs 1000. Let us suppose that industry A sold the output (say, raw cotton) for Rs 400 to industry B and distributed the value added, Rs 300 as wages and Rs 100 as profits; industry B sold the output (say, cotton cloth) to industry C for Rs 600 and distributed the resulting value added of Rs 200, Rs 100 as wages and Rs 100 as profits; industry C sold the output (say, cotton shirts) for Rs 1000 to private consumers and distributed its added value of Rs 400, Rs 200 as wages and Rs 200 as profits. Then the total wages will amount to Rs 600 and profits amount to Rs 400. The total of the two will be Rs 1000 which is spent by consumers on the final output of the economy, i.e., the consumers' goods sold by industry C.

As it is evident, the national product is equal to the value of the final sales of the producing sector. In this example, it is the final sales of industry C to private consumers. So, the value of the national product can easily be found by these sales without being concerned about all the intermediate transactions that may be going on in the producing sector (such as sales by A to B; B to C, etc.). Thus, if we define the production boundary as the line drawn around the producing sector then the national product must be equal to the value of the goods which cross the production boundary irrespective of all those transactions which take place inside the production boundary. It is now clear that the intermediate goods which are demanded for further production will not cross the production boundary.

VALUE OF OUTPUT AND INCOME GENERATED

During the working of the production process, we have seen that various kinds of goods and services are produced, such as food, cloth, machines, buildings, raw materials, fuel, etc. The money value of all these goods and services so produced in the economy is known as the *value of output*, whereas the expenditures on the final output produced by the economy are often referred to as *income generating expenditures*. All the factors of production, i.e., land, labour, capital and enterprise receive the payments from the income originating in the production process. Other payments are also made by the firms in the course of production, such as payments for raw materials, but these do not receive any *income*. The firms supplying these inputs, in turn pass on their net value added to the factors of production in producing them. (Here the term *value added* implies the value added by each industry to the raw materials or other goods and services that it bought from other industries before passing on the products to the next process in the whole chain of production.)

Let us consider the example which we have discussed in the section dealing with production boundary. According to the example, we can make the table given below:

The table helps us to understand the differences between the value of output and income generated during the process of production. The first column indicates the industry; the second column shows the value of output of different industries; the third column has been worked out for value added by each industry; while the fourth and fifth columns show the distribution of value added between the two factors of production (labour and capital). Here we find that the value of output is Rs 2000 and the total value added is Rs 1000 and, therefore, the income generated during the process of production is only Rs 1000 (600+400). It is so because the payments have been made to the two factors of production from the value added by each industry.

This chapter tells us that various types of goods and services are produced in the working

(Rs.)

Industry	*Value of output*	*Value added*	*Distribution of value added*	
			Wages	*Profits*
A	400	400	300	100
B	600	200	100	100
C	1000	400	200	200
Total	2000	1000	600	400

of the production process in an economy. Some of them are produced for self-consumption and others for the market. . We have also understood the various flows of money which enable the smooth working of the entire system of production, exchange and consumption. The demand for the products comes from housholds for single-use and durable-use consumers' goods. Similarly, the demand for intermediate goods and durable-use producers' goods comes from the producing sector consisting of all the producing enterprises. In this process, we were able to distinguish between the value of output produced in the economy and the money income generated in the process.

Exercises

1. Describe the working of the production process in an economy during a year.
2. Distinguish between:
    (a) Single-use consumers' goods and durable-use consumers' goods;
    (b) single-use producers' goods and durable-use producers' goods;
    (c) intermediate and final goods; and
    (d) value of output and income generated.
3. Describe the various flows of money in the working of a modern economy.

CHAPTER 4

Generation of Income

In the previous chapter, we have seen that during the year the Initial Capital is worked upon by Labour and various types of goods and services are produced. This is one aspect of the production process. There is another equally important aspect to it and that relates to the rewards the factors of production receive while producing goods and services. Thus, we can see that in the working of the production process, there is a flow of goods and services on the one hand, and on the other, there is a similar flow of incomes to the various factors of production. Just like goods and services are produced, so also income is generated in the process of production. Before we proceed further to understand the process of income generation we have to distinguish the important concept of *income* from two other significant concepts, namely, *wealth* and *capital*. In ordinary usage, these terms are used in such a way as if they were one and the same thing. In a sense, they are interchangeable. For example, a man who earns a large income is called a wealthy man, and sometimes, a wealthy man is called a capitalist. In Economics, they are distinctly different. An understanding of the differences among these three concepts is essential for the study of National Income Accounting. We shall try to understand their meaning from the point of view of an individual as well as the economy as a whole. We shall start at the national level and then go down to an individual.

NATIONAL CAPITAL

We have seen that in a modern economy, goods and services are produced with the help of *physical capital*. It is the amount of physical capital which affects the volume of output of any country. For example, an average worker in the United States or Great Britain produces so much more than an average worker in our country largely because he is assisted by so much more capital. The rich countries of today were able to achieve a high standard of living largely because of the rapid accumulation of their physical capital during the last one and a half centuries.

We have also noted that capital is man-made and, therefore, *reproducible*. It can be increased with human effort. It generally refers to those things which are produced not for their own sake but for the sake of producing goods and services to satisfy human needs. For example, plant and machinery are manufactured, roads and railways are built and factories and shops constructed in order to produce goods and services. Thus, capital is a means and production is the end. Capital is, therefore, called *the produced means of production*. Then National Capital consists of all those things that the nation has produced in the past which have not been used up or destroyed. In other words, it represents everything that has been preserved out of the sum total of things produced from the very beginning of our economic history till today. It is a heritage from the past.

Accordingly, National Capital consists of the following:

- (a) *Structures*: Residential houses, buildings of business houses and the Government.
- (b) *Equipment*: (i) The producers' durables such as machines, factories, railways, roads, trains, buses and warehouses; (ii) consumers' durables such as autos, cars, radios, TV sets, tape recorders etc.; and (iii) inventories such as stocks of raw materials, semi-finished products and finished products lying in wholesale and retail shops to be sold to the final consumers.
- (c) Monetary gold and silver.
- (d) Net foreign assets.

But some of these items do not appear to fit into capital as we have defined it above. For example, owner-occupied houses, inventories of single-use consumers' goods, monetary gold and silver and finally net foreign assets pose peculiar problems. We have to understand each one of them carefully.

(a) *Owner-occupied houses*: Whether a house is occupied by a tenant or by the owner, it continues to provide accommodation, shelter, and all the other amenities of housing. In case it is rented out to a tenant, the owner gets a regular income by way of house-rent. In this respect, the house produces capital. If the owner himself stays in it, he enjoys all the amenities of housing but does not get any income. We have to treat him both as a producer and a consumer of the services of a house. In other words, he pays rent to himself. We shall call it *imputed* rent. What matters is the number, size and quality of houses a country possesses. The more houses a country has, the more fully will it be able to satisfy its demands for housing over the years. As such, there is nothing wrong in including them as part of the National Capital.

(b) *Durable and single-use consumers' goods*: On the face of it, it is not quite clear why these should be included in the National Capital or simply capital itself. The argument for excluding them from the concept of capital is that they will make no contribution to output. They are the output and the process of production, as far as they are concerned, is completed. For example, take the case of consumers' durables such as cars or radios and the TV sets. They appear not to bring in any income. But this is not really true. They have all the properties of capital. They are man-made and long lasting. Though they are not productive in the same way as, say, a machine which produces cloth, they do provide services. The car provides transport and the radio and the TV provide entertainment to the members of the family over the next few years. They are as good as the public transport and cinemas. These non-material services satisfy wants just as material goods do and should be equally counted as part of income. But our future income depends not only on consumers' durables but also on the stocks of single-use consumption goods lying with us. Thus, our future income will include the consumption of items like tinned foods, fuel, soaps, oil, cloth, etc. which are lying with us. Of course, in this process, one very useful and old distinction between capital goods and consumption goods disappears. Practically, there is no difference between the stock of consumption goods and a bus or a machine in the sense that all of them produce income, i.e., produce goods and services.

(c) *Inventories*: We have already seen in the previous chapters what inventories are. The stocks of raw materials, finished and semi-finished goods in the pipeline are just as necessary for the smooth and efficient working of the economic system as producers' goods. They are a means of production and should be included in the National Capital.

To have a clear understanding of the concept capital, we have to recognise that capital has really two different meanings. Firstly, there is capital as a factor of production. This is owned by firms as opposed to the final consumer. Some of this is fixed capital, i.e., the machines and buildings which have a long life. Then there are inventories — stocks of all sorts of goods (including those lying with consumers). We shall call them as *circulating capital.* They differ from fixed capital in the sense that they are used up in one operation. Secondly, there is the wider concept of National Capital which includes both producers' capital (durable and circulating) and consumers' capital (fixed and circulating). In other words, fixed and circulating capital used in the process of production, durable and other consumers' goods in the hands of consumers, become part of National Capital.

(d) *Monetary gold, silver*: Under the existing international arrangements, these precious metals can be used to purchase goods and services from other countries. For example, a country can import machinery and equipment by paying its price in gold or silver. The imports become a part of National Capital. Hence, the stocks of gold and silver lying with the government of a country should be included in National Capital.

(e) *Net foreign assets*: International cooperation is on the increase in recent times. As a consequence, private as well as government firms of one country have been investing their capital in foreign countries. For example, India has been investing its capital in construction and power generation in West Asian countries. On the other hand, the U.S. and British firms have been investing in India. The net foreign assets of India then represent the value of all real assets located abroad less the value of real assets located in our own country and owned by foreigners. They are a part of National Capital since they produce income.

NATIONAL WEALTH

National wealth is a much wider concept. It consists not only of National Capital but also of land with all the *productive resources given by nature and existing in their natural state.* These resources include not only surface riches like water and forest resources but also all the underground resources such as coal, deposits of oil, copper, and so many other minerals and metals. Thus, national wealth includes both *reproducible and ir-reproducible or non-renewable resources.* Part of the wealth is man-made which is renewable and the other part is a gift of Nature, and hence, non-renewable. It is obvious that wealth and capital are two different concepts. Only that part of wealth which can be used to produce goods or services is capital. Mere existence of natural resources does not help a country to have more capital and wealth. For example, India is rich in natural resources but poor in capital. It is the willingness, the ability and the opportunities to exploit resources which create capital and increase wealth. Capital is both a cause and a consequence of increasing wealth and the standard of living of the people. The bounties of nature offered by its geography and geology determine, to a large extent, the ability of the people to build capital. It is, thus, a consequence. But the rich countries of today were once poor. It was only hard work, enterprise and the exploitation of their natural resources that helped them accumulate the capital which made possible yet more intensive development of the resources. Thus, it was a cause of increasing wealth in those countries. *Material wealth* and physical capital are, therefore, intimately related to each other.

FINANCIAL CAPITAL

We have so far studied capital as a factor of production consisting of *real* assets such as factories, ships, houses, schools, buses, locomotives, etc. which can be used to produce goods and services. This is one aspect which is related to the production process. But there is another aspect which relates to personal wealth or capital. We can call it the *financial aspect*. For example, an individual might say, 'I have a capital of Rs 1000.' What he means is that he has Rs 1000 currency notes or coins with him. Firstly, it cannot be called capital because it is not producing income, i.e., goods and services, in this case. Secondly, though it is an asset to him in the sense that it is *stored up purchasing power* as he can command goods and services, it is a *liability* to the Government or the Central Bank whichever has issued the notes and coins under consideration. Thirdly, at the National level, the assets of the individual get cancelled out by the liabilities of the Government. As such, currency held by individuals cannot increase National Capital. For example, by doubling the amount of money in circulation in our country we cannot add even a single iota to our national wealth or productive power. Thus, a person who has a lot of money can be called a rich or wealthy man but not a capitalist. Thus, we see that mere possession of money cannot be termed as possessing capital in our sense. For the same reason, money lying in our bank accounts — mainly in current accounts and demand deposits — cannot be included in national wealth and capital. The other types of deposits we hold in banks, we shall discuss shortly.

A fairly common definition of capital is *any income earning asset*. But this differs from our original definition of capital as the produced means of production, or, *stored up wealth used to produce further wealth*. In our day-to-day lives, we use the term income earning asset to refer to financial assets held by individuals such as shares, bonds, deeds, or mortgages. They are a part of *personal wealth*. Even fixed deposits held by individuals in banks and other financial companies are like bonds or deeds. All these financial assets constitute financial capital. Most of these financial assets can be sold and purchased in the *Stock Market*. They earn an income for the owner, by way of dividends, royalties or interest. It might be interesting to note from where the income comes. Those who have issued these certificates in return for the money they have received from the asset owners must have created capital with the borrowed funds. Then they must have produced goods and services and made a profit by selling them. Out of the profits earned dividends are paid. Thus, we find that asset owners are also the owners of capital. Then a question will arise as to why all these important items of personal wealth are excluded from national wealth and capital.

The answer to this seeming paradox is very simple. We have already counted the *real things* such as factories, buildings, machines, tools, etc. that constitute the real assets behind the financial assets like stocks, bonds, deeds and the like. All these pieces of paper tell us only who owns the various items of our national capital. Shares, bonds and deeds are only *claims* to assets, but they are not those assets in themselves. They are a sort of superstructure of rights and titles to ownership and attribute the real goods to their ultimate owners. For example, the reality of the Premier Automobiles Limited which manufactures motor cars is its physical plant and its organisation but not the shares and debentures issued by it. If, by any chance, all these paper claims disintegrated, Premier Automobiles would still continue to produce. But if by some accident, the plant and the organisation disintegrated, all the shares and debentures could not constitute another enterprise in its place.

Thus, our study of wealth and capital enables us to reach some important conclusions. First, National wealth is not the same thing as the sum total of personal wealth. (When we add up our personal wealth, we include all our holdings of money, stocks, bonds, debentures and deeds in our individual wealth, but they are only claims against other individuals or organisations. We know every claim is balanced by a liability. As a society, we consider our wealth to be the stock of *material assets* we possess and the only claims we take into consideration are those that we might have against other countries. National wealth is, thus, a real phenomenon and financial wealth, on the other hand, represents the form in which individuals hold their wealth. It is only the way that the claims of ownership are established *vis-a-vis* the underlying real assets of the society). Secondly, national wealth contributes to future output and future satisfaction of wants.Thirdly and finally, capital is always a *stock* of goods existing at a particular moment in time, whereas output of *income* is a *flow* over time, say, so much per week or per month or per year.

GENERATION OF INCOME

We have already understood that the interaction of labour and wealth generates output. Labour and wealth, as we know, consist of the four factors of production — labour includes workers and entrepreneurs and wealth consists of capital and land with all of the sub-soil resources. The entrepreneur combines the factors together with the necessary raw materials that may be needed and sets them to work. The resultant output is their *real income*. Each factor is entitled to its share according to its contribution to the production process. But the factors do not get their rewards in the shape of *real income*, i.e., goods and services but in the shape of money. Thus, every factor gets its *money income* — labour its wages, land its rent, capital its interest and finally entrepreneur his profits.

From where does the entrepreneur get his income or cash to make payments to the other factors of production? He gets cash by selling the output to households. Households own factors of production and as owners of factors they receive incomes for the factor services rendered in the process of production. Thus, we find that there is a *circular flow* of money from firms to households as factor incomes and again from households to firms as expenditure on goods and services incurred by the households. We can see this in Figure 4.1.

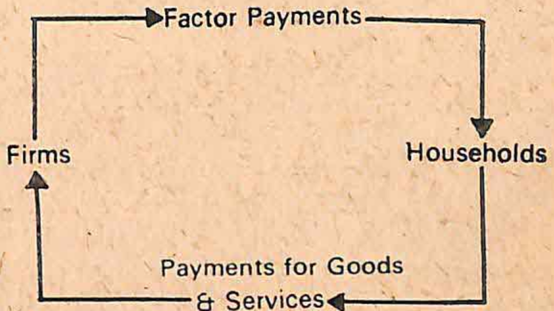

Fig. 4.1

At the top of the circle we find payments from firms flowing to the households thereby creating incomes for the factors for their contribution in the production process. At the bottom of the circle we see payments, this time flowing from households back to firms creating the demand that brings forth production. Thus, we can see that there is a constant regeneration of income, as money is first spent by firms for the services of the factors, and then in turn spent by the households on the output of the firms. In a highly simplified example like this, it is not difficult to find out how and where income is generated. But the actual working of an economy is much more complex and unless we are very clear about our concept of income we might find ourselves in trouble.

Income is essentially an *earning* concept. It should be *earned*. Since ours is a modern economy we earn and receive our income in money. To earn income one has to render *productive service*. Therefore, income is a reward or a payment received in exchange for the production of goods and services or productive services rendered by individuals. We have already seen that some persons receive incomes for which they have made no corresponding contribution to the flow of goods and services. In our country, pensioners, students and thousands of institutions doing public service or even conducting some academic work like research receive grants. Their incomes are called *transfer incomes* or *transfer payments*. The test of whether a particular income is, or is not, a transfer payment is to ask: Is this a payment of income for services rendered by the recipient, or by his property, during the period in which he obtained the income? If the answer is in the negative then it is a transfer payment. This distinction between transfer income and income proper is essential to the concept of National Income, and National Accounting and any failure to understand this distinction would lead to errors both in the compilation and the calculation of National Income.

Keeping in mind the concept of income and also the division of the economy into different sectors depending upon their functions, we can proceed to understand the generation and flow of income and the other related flows, namely, production and expenditure flows in a modern economy. From the point of view of these flows, every sector stands in a *dual capacity*. From Fig. 4.1, we see that business firms pay out incomes to the factors and sell goods and services to the household sector. The household sector receives its income and spends it on goods and services. There is another important sector, i.e., the government. The government is a producer as well as consumer. As a producer, it generates income and as a consumer purchases goods and services from the business and household sectors. We shall take up each sector separately and see how production creates income, income creates spending and spending in turn creates production.

Let us first take a typical manufacturing firm. It incurs generally the following costs:

(a) Wages, salaries and employee benefits,
(b) Materials and other supplies purchased from other firms,
(c) Rent, interest and profit payments,
(d) Taxes, and
(e) Depreciation.

We have already seen that wages, salaries, rent and interest are the payments for factor inputs that result in commodity output. However, profits as a payment is not in line with our earlier argument that it is residual. In actual accounting practices also, it is not shown as a cost. But, for our purpose it will be legitimate and also very helpful to regard profits as a special kind of factor cost going to entrepreneurs for their risk-taking function. Now, it is clear that all the factors are paid their incomes for the *value added* in the production process of the firm.

The puzzling thing about the costs of materials and other supplies purchased from other firms is how they become factor incomes. These purchases represent payments made to other firms for the intermediate products our firm has obtained. These products are used up in the production process and they lose their identity. Let us imagine that these are purchased from firm B. When it receives payment it pays out incomes to its own factors of production. However, all the payments firm B receives should include the cost of raw materials and other supplies it has purchased, say, from firm C. Again, firm C makes payments to its factors when it receives money from firm B for the products it has sold to it. We can stretch our imagination further and visualize that firm C also makes payments to firm D for the raw material, etc., it has purchased from firm D. The process continues still further. Firm D in its turn makes payments to factor inputs and to firm E for the products it has purchased. Firm E again has to meet its costs for hiring the agents of production and other purchases it makes from some other firm. Figure 4.2 shows how intermediate payments which constitute material costs to one firm is made up of factor and other costs to another. In fact, as we try to understand the chain from one firm to another firm, we find that all the contributions to new output generated must have come from the contribution of factors of production somewhere down the line and all the costs of new output, i.e., value added, must ultimately be traced to the payments made to land, labour and capital.

Another way of understanding the process is to imagine that all firms in the country belong to a single gigantic corporation. The various production units of this super corporation would then supply raw materials and semi-finished items back and forth to one another, but there should not be any payment from one division to another. The only payments that would be made are those required to buy the services of factor inputs. At the end of the year, the super corporation would show in its summary of expenses only factor payments and taxes and depreciation but it will have no item as regards material costs.

Let us now turn to taxes as costs. The taxes are paid by our typical firm to the Central, State and Local governments. Just like payments our firm makes to firms supplying raw materials, etc., it also pays taxes to the government agencies for the goods and services that they have produced, such as roads, bridges, law and order and defence. But the point to be noted here is that police protection, defence services, or the use of roads, public administration and so many other services provided by the Government are not *sold* to firms unlike firms which sell goods and services to one another. In case all these services are sold there would be no difference between the sales of firms and the government agencies. The first reason why the government does not sell its output is that the community has decided that certain things the government produces (education, justice, police protection, public parks, hospitals, to mention only a few) should not be sold but should be supplied to all the citizens without any charge. Secondly, it is not possible to distribute the costs of some services like defence and law and order equitably among all individuals since it is impossible to say to what extent anyone benefits from or even uses these communal facilities. In a welfare state, those who pay less taxes stand to benefit more. For these reasons, taxes are differentiated from other payments made by the firm. Now it is clear that taxes are *an addition* to the cost of production. The important

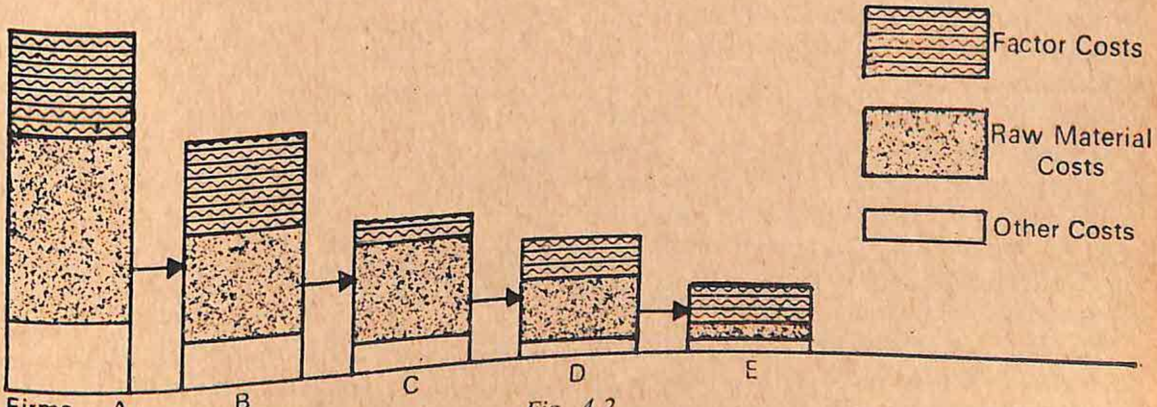

Fig. 4.2

point to note is that there is no *quid pro quo* for the tax payments made by the firm. Hence, by our definition, taxes are not an income but a cost, alright.

We have to note here that *indirect taxes* such as *excise taxes* and *sales tax* are levied on the physical output of the producing units which form part of the cost of production. But direct taxes such as *income tax* and *profits tax* are not costs to the firms. Income tax is paid by the factors themselves. When the firm makes payments to factors, it includes their wages and salaries in its cost but not the taxes they pay to the government. Similarly, a profit tax also is paid only when profits are earned. In case a firm loses money in one year, it need not pay a profit tax.

There is one more item left out of our list. It is depreciation. In producing goods and services our firm has also used up a certain amount of its assets such as buildings, machinery and tools. A cost must now be charged for this wear and tear if it is to be able to preserve the value of its physical plant intact. If it does not make this cost allowance, it would fail to include all the resources that are used up in the process of production and, therefore, it would be overstating profits. Again, this cost is different from other costs. Unlike other costs, depreciation is not paid out to others. But in the company accounts an entry is made for depreciation allowance stating that the plant and equipment are now worth a certain amount less than at the beginning of the year. Since depreciation is a cost as part of the resources used in the production process, was its own capital equipment, the firm includes depreciation in the price of goods and services sold in the market. By doing this it is only reimbursing the cost it had incurred in purchasing its fixed capital some years back.

We shall now study as to how production, income and expenditure are generated in the government sector. So far as the industrial and commercial enterprises of the government are concerned they are a part of the producing sector just like other private enterprises. The only items that are to be studied separately are those which are produced by the government but are not *sold* in the market. We have already seen that government receives its income by way of taxes from the producing as well as the consuming sector. We call it *tax income*. To produce the various types of community facilities, it hires factors of production from the household sector. These factors produce goods and services required for public consumption. The government receives tax income and spends it on factor incomes. On the one hand, production takes place and on the other hand incomes are generated and they are paid through government spending.

As far as the household is concerned, we have already assumed that no production takes place in this sector. But in actual practice, household services are produced and hired servants receive their incomes. We can treat these services as being produced in the producing sector for our accounting purposes.

Thus, we find that there is a circular flow of money representing production, income, and expenditure. Figure 4.3 shows all these flows.

SOURCES OF INCOME

So far, we have understood that output and income depend on labour and wealth of a country. Even for individuals, labour and wealth are the only two sources of income. A person can earn an income either by supplying his own labour or supplying the services of the property he owns. Any kind of human effort can be defined as labour. The effort can be manual or mental, skilled or unskilled, scientific or artistic. For example, the work of farm labourers and transport workers is manual, whereas the work of a scientist or a professor is mental. Similarly, the work of a doctor, engineer, scientist or an artist is skilled where-

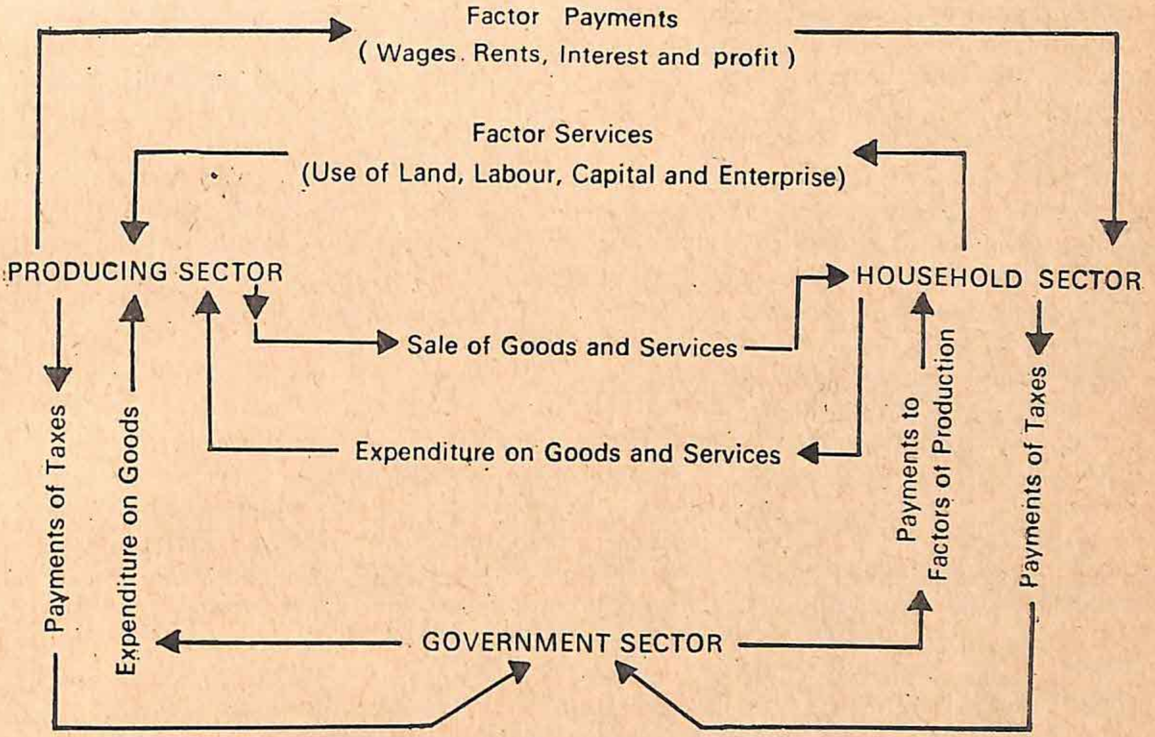
Factor Payments
(Wages. Rents, Interest and profit)
Factor Services
(Use of Land, Labour, Capital and Enterprise)
PRODUCING SECTOR
HOUSEHOLD SECTOR
Sale of Goods and Services
Expenditure on Goods and Services
Payments of Taxes
Expenditure on Goods
Payments to Factors of Production
Payments of Taxes
GOVERNMENT SECTOR

Fig. 4.3

as that of sweepers, washermen, etc. is unskilled. Whatever may be the type of work, the fact is that it requires effort on the part of individuals and their effort has to be compensated. The compensation they receive can be called wages, salaries or remuneration.

If we look up at the four factors of production we find that entrepreneurship also belongs to the category of labour—a special type of labour indeed. His work of bringing together the other three factors of production along with the other inputs needed such as raw materials and managing the entire business requires both manual as well as mental effort. For this he has to be adequately compensated. Profits are, therefore, his income. We may note here that he is the person who organises production or conducts business. He hires the three factors of production and keeps the production process going. As an employer, he has to pay wages to workers, rent to land and interest to capital out of the sale proceeds of the output of his firm. Whatever surplus remains with him after meeting all these expenses or costs, will be his profit. Profit is, thus, a *residue*. This residue can be positive or negative, big or small. This is not the case with the incomes of other factors. Their incomes are, as a rule, fixed either by contract, custom or by law, and they can be revised by mutual negotiations and agreement between the employer and the employees. On the other hand, profits are highly volatile. They are not subject to any rule. In this machine age, goods and services are produced in anticipation of demand and the decision to produce must be taken some months or even years before the goods actually appear in the market. Therefore, it cannot be said in advance what the profit would be and we know demand for goods depends upon so many factors which cannot be foreseen with certainty.

Now it is clear that as far as the sources of income are concerned, labour and the entrepreneur come under one category while land and capital come under the second. The latter are usually termed as *property*. Therefore, income is derived either from (a) work or (b) ownership and control of property. In the case of some individuals, income is derived from both sources. We find this in all the countries where private ownership of property is guaranteed under the law of the land.

(a) Income from Work

Work is the main source of income for most of the people throughout the world. In a capitalist economy like the U.S.A., too, about 67% of the national income consists of wages and other supplements to employees. In our country, wages, salaries and incomes of self-employed persons constitute about 85% of our national income. To earn income, one may work for others or for himself. If he works for others, we shall call it *wage-employment* and the income is wage or salary. On the contrary, if he works for himself, we call it *self-employment* and the income as *self-employed income*. In India, self-employment generates more income than wage employment. In wage employment a worker becomes an employee and works in the production unit of his employer. Depending upon the skills the workers have acquired they can be differentiated into different groups. We have already seen that ours is an age of specialisation. Every job requires a specialist. For example, a dentist cannot do the job of a surgeon, a civil engineer cannot do the work of a mechanical engineer and so on. On the basis of this, labour can be divided into different factors of production, such as, doctors, engineers, drivers, mechanics, teachers, artists, dancers and so on. We cannot expect a teacher to do the work of an artist or a truck driver to pilot an aeroplane. One category of labour cannot be *substituted* for the other. But one thing is common to all of them, i.e., they earn their income either by manual or mental effort or both. If a worker earns his living by manual work, we usually call him a *blue collar worker*. By and large, industrial workers come under this category. On the other hand, if a person earns his income mostly by mental effort, we shall call him a *white collar worker*. As a matter of tradition, the incomes of blue collar workers are called *wages*, and the earnings of white collar workers are called *salaries*. Again, in the course of history, they have acquired different levels of status in the society. Whatever may be the type of work done, it is a source of income for those who do it. By and large, the incomes of the employees are called *compensation of employees* and this covers both wages and salaries.

Income from self-employment is also considered income from work for practical purposes. But, theoretically we can argue that the entire income a self-employed person receives cannot be attributed to his effort alone. There is some truth in this argument. We have already seen that self-employed persons are separate production units by themselves. Any production unit worth the name requires the other co-operating factors of production in addition to human effort to produce goods or services. In most cases, the producer supplies his own land and capital instead of borrowing their services from the market. Whatever the surplus that remains with him after deducting the costs of production will be treated as his income. In fact, his income includes interest for the capital and rent for the land he has supplied. If he were to provide these factors to others he would receive interest and rent. But in practice, it is difficult to draw a dividing line between his labour, land and capital. They are lumped together and the owner treats the returns to all the factors as earnings for his own initiative.

Indian agriculture is characterised by this type of employment. 70% of the Indian farmers are small and most of them are self-employed. In the services sector also, it is very important. For example, we find doctors, lawyers, engineers and other individuals working as single proprietors or as partners with others, in production, trade and transport services, and a host of others working on their own in our country. Though they produce goods and services for the market, they cannot be compared to large business or industrial undertakings in regard to the type of organisation and the level of production. All of them, therefore, come under the category of *unorganised sector*. All the self-employed individuals and their producing units can also be termed as unincorporated business enterprises. The volume of income generated in this sector in our country is much more than in most of the developed countries. For example, in the year 1972-73, the share of the self-employed income in our national income was 48.3% for the economy as a whole. It was 65.2% for the primary sector and 40.9% for the services sector. The self-employed income in the U.S.A. was only 8% of its national income during 1971.

(b) Income from Property

Income from property is much more attractive than income from work. This is because of the fact that owners of property need not work for an income. Their property earns for them. That is why property income is sometimes called *unearned income*. We have seen that income from work involves human effort. Work is unpleasant for many and to work for others is more unpleasant. It is natural for individuals to work hard to possess property for all the conveniences, comforts and the leisure that it bestows upon its owners.

Property consists of most of the items that we have included in the national wealth. Land with all its surface and sub-soil resources and capital consisting of all types of fixed assets such as machinery, tools, factories, buildings and all the liquid assets such as promissory notes, shares and bonds come under the category of property. A question may arise as to why we have included both capital goods and the financial assets that represent them in property. It may seem that it is the capital goods which earn income and the liquid assets have nothing to do in the process of income generation. This is not true. Firstly, we shall study the sources of income of individuals. For example, village money lenders in India earn their incomes by lending money to villagers for consumption purposes. Their lending does not create any assets. Even then their funds are a source of income for them. The same is the case with many chit funds and thrift societies which give loans to their members for financing consumption expenditure. These societies usually provide loans mostly on the basis of promissory notes or bonds furnished by the members who take loans. These legal documents have no fixed capital behind them, except that they have a claim against the debtors. We are, therefore, justified in including these paper titles in capital. There is another interesting case in which bonds are issued by the government for the loans it obtains from the general public. For example, during inflation when the prices rise fast, the government may decide to decrease the amount of money in circulation and reduce the purchasing power of the affluent sections of society. To take away the excess money from the public, it starts selling bonds which carry a fixed rate of interest. Those who subscribe to the issue of bonds (i.e., those who purchase bonds) get liquid assets and the government gets money. But the money so received is not spent by the government either for investment or for consumption purposes. It simply *inactivates* the money, i.e., it keeps the money in its lockers. During the time of wars, also, governments usually take loans from the public to finance war expenditure. Again, war expenditure is not capital formation whereas the bonds issued by the government become capital for the bond holders.

In so far as the stocks, shares and debentures are concerned, they are issued with the sole aim of creating capital assets. As such they are backed by material capital which is used to produce goods and services. It may appear that we need not include fixed capital as well as the paper titles that represent them in property. A moment's reflection will reveal that it is not so. We have seen that these liquid assets are negotiable, in the sense that they can be sold and purchased in the *Money Market*. In the course of time, they may change many hands. The firm which has issued them to finance its *capital expenditure* need not necessarily know who the actual owners of its assets are from time to time. Of course, it is a fact that the company belongs to those who own these liquid claims. The claimants do not own any specific piece of capital of the company but only have a right to share in the profits earned during the year. They are not the people who manage the working of the company. Most of the shareholders may be hundreds of miles away from the location of the firm. As such, they have no direct contact or knowledge of the actual position and day to day problems of the enterprise. Therefore, they tend to look upon their shares as the real capital in preference to the actual plant and machinery. As such, there is nothing wrong in viewing paper claims as part of *individual property*. Now we shall discuss the various types of property income.

The first and foremost type of property income is *rent*. Though the concept of rent has special meaning in Economics, we shall try to understand it in its everyday usage. For example, when we speak of renting a house, or a car, or a piece of land, we use the term rent to signify the price we have to pay for the use of the property of someone for a certain period of time. But in Economics, the idea of rent was originally used to signify the payment made for the use of original and indestructible powers of the soil. However, this aspect is also taken care of when we use the concept of rent in our daily life. The owners of land receive rental income. Mere ownership of land enables them to receive income forever on a regular basis. Broadly speaking, landlords receive rent for the use of surface and sub-soil resources of their land. The underground resources of the earth such as oil, coal, manganese, copper, iron ore, etc., are very valuable, but at the same time *exhaustible*, unlike the surface resources such as forest wealth which can be renewed by human effort. The underground mineral and metal wealth gets depleted by continuous exploitation. The owners of the land where these resources are found get rent for leasing out their mines. In most cases it is not possible for individual land owners to exploit these resources, because it is a highly risky venture involving a huge amount of funds. Naturally, this work is undertaken by certain companies who have specialised in exploration and exploitation of underground resources. They pay *royalty* to the owners. The term royalty is much broader and it can be used with regard to the use of other types of property. The rental income, therefore, consists of rent for the surface use and royalty for underground use of the land.

Rent, as a source of income, arises in connection with the use of man-made capital goods by those who do not own them. Buildings, the means of transport such as trucks, taxis, buses and other modes of conveyance are rented out by the owners. Several types of machinery can also be had on hire basis for a specific length of time. Except land rent, other types of rental incomes are a common feature of urban life in our modern society. The growing population and rapid urbanisation throughout the world need more and more buildings for housing, shopping, manufacturing, trading, storing and many other business purposes. In fact, during the last three decades, the demand for buildings has outstripped their supply resulting in a steep rise in the rental income of individuals and organisations. This has happened in spite of the fact that construction of all types of buildings has been undertaken on a large scale by individuals, private industries, governments and their organisations. As far as individuals and private real estate companies are concerned, investment in construction is considered to be a good business proposition. Firstly, the buildings earn rents for their owners. Secondly, the risks and inconveniences that are associated with other types of investment such as running a manufacturing company or a business do not arise at all. Thirdly, while providing a fixed income, land and buildings continue to *appreciate* in value over the years. This is just the reverse of capital goods. In the case of capital goods we have seen that they depreciate in value as time passes and there is the further danger of rapid obsolescence in the sense that the new machines of the same type may be able to produce goods and services more efficiently and thereby lower the costs of production as compared to the existing ones.

The owners of other types of property such as transporters and owners of mobile machines also earn rent on hiring out their assets. We can call these assets *moveable property* and land and buildings *immoveable property*. Since heavy machinery cannot be transported from place to place the owners usually rent it out along with the land and buildings where it is located. By definition, machinery and equipment should be included in immoveable property. The advantage in this type of rental income is that it continues to increase with the growing prosperity of the economy. Since it is a *contractual income* it can be increased at the beginning of every fresh contract. In spite of the fact that rent is an important type of income its share in the national income, even in the advanced countries, does not appear to be very significant. Even in our country it constitutes an insignificant part of the total of factor incomes. For example, it was only 4.3% of the entire income of the factors of production during 1972-73.

Just as wages are the *return* to labour and rent is the return to the land, so also interest is the return to capital. Interest is a payment to be made for the services of capital goods. The owners of capital then get interest and it becomes their income. At first sight it might appear that there is no difference between rent and interest as far as the use of capital goods is concerned. Let us understand the difference between these two types of incomes. In the case of rent, machines are usually leased out for a specific period of time by the owners and those who rent them pay the amount of rent according to the terms and conditions of the lease agreement. On the other hand, interest is paid by those who *purchase* capital goods. To whom do they pay interest ? They do not pay interest to those from whom they have purchased the machines. They pay interest to those people or organisations who have lent them funds. Thus, interest and rent are quite separate.

Modern industrial and commercial enterprises finance their capital expenditure from borrowed funds, i.e., they purchase machinery, equipment and other structures with the money they have raised as loans from the general public and other financial institutions which specialise in money lending activities. It is not necessary that the entire expenditure on capital goods is financed by borrowings. The company might have some savings to meet part of the expenditure. Even then interest has to be imputed to their own funds as they would fetch them a return if they were to be lent out to some other company. The point to note is that those who lend their money to the company for purchasing capital goods are the *indirect* owners of capital. Thus, whenever a company needs funds to expand its productive capacity, it can issue bonds and debentures. Those who are interested in earning interest income will purchase these papers which carry a fixed rate of interest.

Selling bonds and debentures is only one of the many ways of obtaining funds for starting or expanding an industry. Another method is to issue shares. Bonds and shares again are not the same thing. The income on bonds is fixed whereas the income on stocks and shares which is called *dividends* is not fixed. Dividends depend upon the profit earned by a company. Profits in turn depend upon many factors. The incomes and tastes of the people, prices of competing substitutes, government's policy, actions of rival firms, availability of raw materials and labour, general economic climate and a host of other factors influence the profits that a firm may earn. The problem is that all these things cannot be foreseen. Hence, dividend income which is directly dependent upon profits is also quite uncertain. Though the rate of interest also depends upon profits and is subject to change either upwards or downwards it cannot be changed during the period of the contract, i.e., the time fixed for the repayment of the loan.

Coming to interest income, we should note that it is not only the companies which take loans, but also the local, state and central governments which borrow from the public as well as financial institutions such as banks, to finance various development plans. In turn, some nationalised industries like the Hindustan Steel Limited in India may take loans from the Central Government. Who are the people who earn interest income by giving loans? Firstly, there are rich people whose incomes are too high to be spent. Saving is automatic with them. Their savings and *lending* earn them interest income. We may point out here that their savings do not involve any sacrifice, in the sense that there is no reduction in the comforts, conveniences and luxuries enjoyed by them. Secondly, there are certain people who would like to have larger incomes in future. The motives to have a larger income in future may differ from person to person. Some may have plans to construct a house, to purchase a piece of land or to give a fortune to their children. Therefore, they invest their savings in interest-yielding assets. Banks and insurance companies also lend money to earn interest. It is the main source of income for them. The higher the interest earnings, the more will be the incomes for the owners of these companies.

At present, according to the covenience of the lender, one can invest his money either in short term loans or in long term bonds and securities. Of course, the longer the period, the more will be the rate of interest. But the government securities carry a low rate of interest compared to similar bonds issued by private organisations. Loans to the government are considered to be the *safest investment* and, hence, the difference in interest rates. Interest has to cover risk premium in lending to new or not-so-well-known organizations.

In so far as financial institutions such as commercial banks, insurance companies and chit fund societies are concerned, they try to earn as much interest as possible by investing their funds both in short and long term loans. They cannot afford to keep their funds idle even for a day. Time is money for them. At the same time, they have to see that they get back their loan money together with interest thereof safely from the debtors. Since these companies hold the funds of the general public and business companies in trust and have to redeem their future obligations—banks to their depositors and insurance companies to their policies—they invest their funds mostly in government bonds and securities, other public sector undertakings and well established private industries. Income and interest are certainly their main objectives. For short term purposes, they purchase Government Treasury Bills, or Bills of Exchange of private companies. The Treasury bills carry a low rate of interest, as their duration is only 90 days. They can get a higher rate of interest by investing in long term government securities or by purchasing debentures of private companies and government undertakings. There are other long term loans such as Post Office Savings Certificates and National Savings Bonds which carry attractive rates of interest. For example, in our country we find today that commercial banks and other well established private sector manufacturing and commercial undertakings offer higher rates of interest to mobilize deposits. The investment opportunities are so many and so profitable that they cannot finance all of them from traditional sources. Therefore, they are coming out—banks particularly—with new schemes to attract new deposits. In recent years, bank deposits in our country have been rising steadily. This is an indication that more and more people are trying to earn as much interest income as possible taking advantage of the new schemes launched by banks.

In spite of all this, we have to remember that interest, as a source of income, is restricted to a few people in the society and only to a few sectors in the economy as a whole. It is, therefore, to be expected that its share in the national income should be very low. There is not much of a difference between the rich and the poor countries in this regard. For example, in the U.S.A. it was 4.2% of the National Income and in the case of India it was 5.2% of the total factor incomes. Of course, it was 10.4% for the organised sector—double the share for the economy as a whole during 1972-73.

We have already seen that a person can purchase loan certificates such as bonds, debentures, and post office savings certificates which carry fixed interest or stocks and shares which do not carry any fixed income. The former case is simply considered as a *loan* and the purchaser has a claim on the debtors. In regard to the latter, by purchasing stocks, a person becomes part owner of the company which issues shares and his returns are really a profit and not interest. The use of money for purchasing shares is called *investment*, not lending. It is interesting to note that this type of investment carries a high degree of risk. There is income as well as capital uncertainty about this. Income uncertainty arises because shareholders' income depends on profits and profits are quite uncertain in this age of ever-changing technology and tastes. We know that shares and securities are traded in the Money Market. This market is subject to all sorts of economic, political and psychological pulls and pressures. If, in the opinion of the market, the future is expected to be bright for a particular firm or industry, a person who is holding shares of this concern will be able to sell his shares at a premium. For example, a Rs. 10 share may be sold at, say, Rs. 15. In this case, the profit of Rs. 5 is a *capital gain*. Thus, the market value of shares depends upon the expected profitability of a firm, not today, but in the years to come. And expectations about the future are quite uncertain. Sometimes the market value of the Rs. 10 share may fall below its face value. For example, the shares of the Bata Company and Philips India Ltd are sold at a high premium because of their past performance and equally high profitability expected in the future. Those who are willing to take risks in earning this type of income sometimes get very high rewards.

The income of share-holders depends upon the profits earned by their firm. Profits arise in the production activities of a firm. Throughout the year, it incurs various costs in its operation and earns revenue by selling its products. The surplus of revenue over cost is called *operating surplus*. It can be broadly called *gross profit*. Operating surplus includes many of the expenses to be met with at the end of the year such as, interest on loans, profits tax, depreciation allowance, etc. . The net surplus that emerges after meeting all these expenses can be termed *net profits*. They include the income of the entrepreneurs and the shareholders. Thus, profits and dividends are a residue—though part of the operating surplus. As a matter of fact, all the net profits are not distributed among the entrepreneurs and shareholders. To meet unexpected contingencies or to augment the productive capacity in the future, a part of the profits are kept in *reserve*. They are called Undistributed Profits and Additions to Dividends. Profits are very important as a source of income in the organised sectors of the economy. For example, profits and dividends constituted 18% of the total factor incomes in the organied sector for the year 1972-73 in our country. For the economy as a whole, they were only 5.5% in 1972-73—as insignificant as rent and interest.

We have seen in this chapter how income is generated in the production process, how it gets distributed among the various factors of production and how the households consisting factor inputs spend their incomes on the output produced. We have further understood the main sources of income and the characteristics that seperate them from one another. We have got a rough idea of the three flows, namely, production, income and expenditure moving in a circular path, each one giving rise to the other. From this we shall proceed to understand what National Production, Income and Expenditure are and try to measure them.

Exercises

1. What is National Capital? What items would you include in the National Capital of an economy?
2. Explain the difference between National Wealth and National Capital.
3. What is financial capital? Give reasons for excluding it from National Capital.
4. Explain the process by which the costs of materials and other supplies become factor incomes.
5. Examine the process of income generation in the Government Sector.
6. Explain the difference between wage income and self-employed income.
7. Bring out the difference between rental income and interest income.
8. What do you understand by loans and investment? Which is safer and why?
9. Explain the concept of operating surplus?
10. Is there any difference between profits and dividends as sources of income? Explain.

CHAPTER 5

Concept and Measurement of National Income

The study of the working of the production process and the flows of money have enabled us to understand the circular flow of economic activity in an economy. We have seen that production of goods and services by various factors of production creates income for them. Income creates spending and spending calls forth production. There is no starting or finishing point in this circular flow. To understand this continuous process, we have fixed our attention on one particular year and seen the working of the production process. In this chapter we shall try to understand what National Income, National Product and National Expenditure are. Since one flow gives rise to the other, all the three flows are expected to be equal in their value. We shall study how they can be identically equal and try to know some special cases where, particularly National Expenditure differs from National Product and Income.

The flow of goods and services in any particular period consists of hundreds of varieties such as automobiles, cycles, aeroplanes, machines, cloth, foodgrains, oils, services of doctors, lawyers, engineers, actors, dancers, singers, barbers, etc. All of them are termed *product or output*. When we are asked, for example, what the output of India in any particular year was, we do not say so many million tons of foodgrains, so many million metres of cloth, so many million kilowatts of power or so many lakhs of machines. We simply say that our output was so many millions of rupees. How do you get this figure? We know every piece of economic goods is given a relative importance or value, given by its price. This value is expressed in terms of money. Thus, money value is the common denominator and by adding up the money values of the different varieties of goods and services we get the total value of the output. National Product is, therefore, the final figure we arrive at when we apply *the measuring rod of money* to diverse goods and services that are produced in an economy with its factor inputs. Therefore, when we try to know the income of the factors of production, i.e., National Income, we are trying to discover the total value of the goods and services they have produced *in a year*.

Before we proceed further in understanding the concept of National Income we have to keep in mind the distinction between *stocks* and *flows*. National wealth or capital refers to a *stock of goods* existing at a particular moment of time. On the other hand, *income* is a *current flow* of goods and services and it is wealth which permits or creates income. Income will have meaning only when it is expressed in terms of the period over which it is produced. For example, if a person says, 'My income is Rs. 2,000,' it is meaningless unless he also states the time period over which it is earned, say, 'per year' or 'per month. The distinction between wealth or capital and income, is similar to that between, say, distance—which can be expressed in kilometres—and speed, which must be stated in kilometres *per unit of time*. It is a fact that the output and the capital of a community consist of a collection of goods (though output includes services as well, while capital does not). But the goods which are included in output are not the same goods which are included in capital. We include those goods in capital which exist at *a particular moment of time*; and the goods we include in output are those *produced during a period of time*. For example, we can inspect our wealth on any given date, but we cannot do so with regard to our National Income, which consists of goods and services. It does not *exist* in quite the same way as wealth. If our National Income in 1970-71 was Rs. 34,476 crores (in current prices), this does not mean that on any day of that year we could actually discover this much value of goods and services. We know that production and consumption go on simultaneously. The goods produced today are consumed tomorrow or the day after; or they may be consumed one or two months hence. Suppose the year's flow of output had been collected in a huge reservoir without being consumed, then at the end of the year 1970-71 the volume in the reservoir would indeed have totalled upto Rs. 34,476 crores. Thus the figure of 34,476 crores refers to the value of the flow of production over the year and should not be visualized as constituting a given sum of wealth at any moment of time.

FACTOR INCOME

The output which emerges in the process of production gets distributed among the four factors of production, as money income. The incomes of the factors are costs to their employers. As such, factor income or factor cost is the same thing, but viewed at from two different points of view. In economics, we take profits also as a *cost*. So National Income which consists of the sum total of the *earnings* of the basic factors of production can be looked upon as a *cost* also. We have already noted that all costs are ultimately resolved into the incomes of factor inputs. But incomes can also be earned from abroad both by individuals as well as by government. This aspect has to be kept in mind while studying and calculating the factor incomes.

(a) Domestic Income

We have seen that income is of two types : (i) wage income, and (ii) non-wage income. In other words, income from work is known as wages including salaries and income from property is rent, interest and profit. These two types of income earned within the territorial limits of a country are defined as *domestic income*. Income is generated both in the producing and government sectors. Let us study the various components of income in these sectors and see how the sum total of domestic income is arrived at.

As far as the producing sector is concerned, wages, rent and interest are a part of domestic income. As regards profits, the usual practice is to distribute only a part of them to the shareholders and keep the balance to meet the direct taxes such as company profits tax and increase the Reserve Fund. The amount of taxes to be paid and undistributed profits are actually earned by the enterprise. Hence, they are a part of income. The undistributed profits really belong to the shareholders. Thus, dividends, corporate taxes and undistributed profits become part of the domestic income. In some enterprises there may be a practice of paying a part of the wages *in kind*. For example, rent-free quarters together with free electricity and water may be provided to employees in some enterprises. The market value of these *real wages* should also be included in income. As far as the owner-occupied houses are concerned, the value of *imputed rent* has to be included in domestic income.

The industrial and commercial enterprises in the public sector (government sector) are also part of this sector. As such the surpluses of public sector undertakings also become part of domestic income.

The incomes of the unincorporated enterprises (self-employed persons, partnerships etc.) are usually called as *mixed incomes* because it is very difficult to find out the share of the different inputs provided by the owner himself. The entire earnings are treated as profits and included in domestic income. There are some producers who mostly come under this category, but consume a large part of their own produce. We have already decided not to omit the production meant for self-consumption, in case it forms a significant part of the total production of that particular commodity or service. Therefore, the market value of the production kept for self-consumption should also be included.

The government as a producing sector poses peculiar problems. First of all, the government does not earn taxes, but collects them. These taxes are the incomes of factor inputs which the government has collected. If the same tax money is used to produce various goods and services by paying wages and salaries to its workers, the government sector does not appear to generate any income. This is because the incomes of the non-government employees were already counted and taxes are a part of their income. If the same money is paid to government employees, it would appear that it should not be called as income. This is not correct. The non-government employee's gross income, before payment of taxes, measures the value of his contribution to the flow of goods and services. Similarly, the government employee's income measures *his* contribution. Therefore, both should be included in domestic income. The government also pays part of the wages in kind to some of its employees. Particularly, defence personnel get free rations, free accommodation, free medical assistance etc. All these facilities should be included in income taking their market value.

Government usually owns property as well. In every country we find governments possessing land, buildings and fixed capital on a large scale. Part of this property is rented out to private sector industries. In addition, the government earns interest by providing loans to private as well as public sector enterprises. Thus, rent and interest income should be included in domestic income. In our country, for example, departmental undertakings like Railways, Posts & Telegraphs, etc. earn property incomes.

Thus, domestic income consists of the *incomes received* by the four basic factors of production. The total domestic income can be arrived at by adding up wages, rent, interest, dividends, the undistributed profits of private industries, surpluses of public sector undertakings, mixed incomes of self-employed persons and unincorporated business, imputed house rents, imputed value of goods kept for self-consumption and finally *direct taxes* paid by individuals and organisations.

(b) National Income

The concept of National Income refers not only to the income earned within the domestic limits of a country but also outside its territory. From the beginning of the second half of this century international trade, aid and investment have become important tools in promoting the economic development of a majority of the backward countries. As such, incomes earned by domestic factors of production outside their country also assumed significance. There are two ways of earning income from outside countries. Firstly, by providing different types of services. For example, ships and aeroplanes of our country can provide their services to foreigners in transporting their men and material. These services earn income from foreign nationals. Our banks and insurance companies can also earn income from abroad by providing banking and insurance services to the outside world. Similarly, when tourists visit our country the tourism department earns foreign income. In other words, we earn income by exporting our services to other countries. Secondly, a country can earn income by owning property in foreign countries. We know property need not be land, buildings and capital alone. For example, if our government, people and our private industries purchase stocks, shares, bonds or securities from other countries they become a part of the property of our country in addition to the ownership of capital, buildings and other assets held abroad. The assets held by us abroad will earn for us rent, interest, profits and dividends. These are a part of our National Income. The point to note is that it is not a one way affair. Foreign nationals and foreign private companies may be investing their resources in our country. They may purchase our shares and bonds in our country and also provide machinery and equipment for our industries. Therefore, they also earn income from our country. We have to deduct the income they earn from our income earned from abroad. Whatever *net asset income* remains becomes a part of our national income.

To find out the sum total of National Income we have to know the net asset income earned from abroad by all the members of the community including the government. By adding the net income earned from abroad to the domestic income, we will get the total National Income.

NATIONAL INCOME = Domestic Income + net asset income earned from abroad.

Thus, the difference between national income and domestic income is the net property income from abroad. The net property income from the outside world may be negative or positive. If a country receives more and more foreign investment over a number of years instead of investing abroad, its net foreign asset income will be negative. This is the case with regard to many developing countries, including India. This is because the country has to pay out more to other countries as earnings on their investments in its territory than it will receive from abroad for its own returns on its own investments overseas. In such a situation, the net property income from abroad being negative, its National Income will be smaller than its domestic income. In the developed countries like the U.S.A. and U.K. the position is just the reverse. Their net foreign asset income tends to be positive. Therefore, their National Income is larger than their domestic income.

National Income, as we have seen above, is the sum total of factor incomes *earned* within and outside the country by the *four domestic factors* of production. It is the value of goods and services *produced* in a year. National Income can, therefore, be *defined as the net national product at factor cost*. It is nothing but the cost of producing the national output. By factor cost we mean the income received by the domestic factor inputs. Accordingly, the term National Product at factor cost excludes the share of the National Product accruing on balance to foreigners on account of their capital and enterprise operating in a country. The *net* National Product at factor cost and the National Income are one and the same thing. Here the term *net* is very significant. The production of output involves the wear and tear of fixed capital which is called *depreciation*. The total value of output includes depreciation as well. Hence, it is called *gross national product*. We have to deduct the value of depreciation from the gross product to arrive at the net national product. It may be noted in this connection that the value of the fixed capital used up in production in the *current year* is not produced this year. As such it cannot be included in the value of *current output*. National income, we have seen, is the value of the *current flow* of goods and services.

(c) Measurement of National Income

The concept of National Income is the yardstick with which the performance of an economy is measured. Every country would like to know the performance of its economy every year so that it can chalk out further programmes for the welfare of its people. It is, therefore, essential to measure the *annual* flow of goods and services. As National Income can be viewed from three angles, i.e., as production, as income and as expenditure, so also can it be approached from three different routes to measure it. From the product side, we can follow the *flow of product approach*, from the income side we can adopt the *earnings and cost approach* and from the expenditure side, the flow of expenditure approach. These three methods are also called *production method*, *income method* and *expenditure method*. Whatever method we adopt to measure National Income, we will find product, income and expenditure to be identically equal.

(d) Income Method

Since we are studying National Income in this section from the point of view of earnings and costs, we shall use the income method to calculate it. First, we shall take up the producing sector. The factor incomes, namely, wages, rent, interest and profits (including undistributed profits meant for paying taxes and to increase the reserves) should be added together. The value of wages paid in kind and the surpluses of public sector enterprises should also be added. As regards the government sector, wage and other costs incurred by the government have to be added up. Since most of the services produced by the government are *free* and are not sold in the market, it is not possible to estimate the market value of the services. In the absence of this value, we have to take their value as equivalent to their costs. To this, property income earned by the government and the value of wages paid by it in kind should be added. The mixed incomes of self-employed people and small business together with the value of goods meant for self-consumption should be included. Finally, the net asset income from abroad has to be added.

It is a normal practice that business income is calculated only after deducting business expenses, such as costs of raw materials, transport costs etc. The same logic is applied in the case of individuals also. Therefore, some people would argue that when employees have to incur heavy expenses for transport from their homes to their places of work, the expenses on transport should be deducted from their incomes. The argument can be stretched further to include food, clothing, fuel etc. as expenses to be deducted from one's income. But the general practice is to exclude all these expenses in the context of earned income. But the direct taxes paid by companies and individuals are a part of income and as such should be added to the National Income.

(e) Personal Income

This concept is related to the concept of national income. Yet it is different. While national income is an *earnings* concept, personal income is a *receipts* concept. It can be arrived at by adding some items to national income and at the same time deducting some other items from it. Personal income can be defined as the total *income received by households* from all sources. We know that retained corporate profits and profit taxes do not reach households. Hence, they should be deducted from National Income. So also the surpluses of the public sector companies have to be subtracted. Employees in the private as well as in government service contribute to social insurance schemes such as Provident Fund, Life Insurance or accident benefit. These contributions also should be excluded from National Income.

Let us see the additions to be made. The first major item is *transfer payments*. We know that they are not a part of National Income since they are not earned by production. All transfer payments made by the government to the household sector such as pensions, scholarships, and other types of grants have to be added. Next, business also makes transfer payments such as sick and unemployment benefits, bonus etc. There is another important item of transfer payment. It is the payment of interest of national debt. The government pays interest on public debt from its tax revenue. We have seen that government takes loans from the public to finance war expenditure or to control the money supply in the economy. Debt financing is, therefore, supposed to be unproductive. Even then the net interest paid by the government *plus* the interest paid by consumers have to be added up. Now a days, we come across many instances of people and governments of other countries *sending gifts* to the nationals of some other countries. They are also an important means of transfer payments. For example, the Israeli economy is very much dependent upon gifts from co-religionists in other countries. In our country also, people receive gifts and remittances from their family members who have permanently settled abroad. All of them are a part of personal income.

Thus, to calculate personal income we have to subtract the retained profits of enterprises, profit taxes, and contributions to social insurance from the national income and add government and business transfer payments, the net interest paid by the government and consumers and finally foreign gifts and remittances. Depending upon the value of the items to be subtracted and added, the value of personal income may be more or less than national income.

(f) Disposable Personal Income

This concept relates to the income which is available to households to spend as they like. It is at their disposal. It can be arrived at by deducting *personal taxes*—central income tax and other direct taxes of State and local governments—from personal income. Disposable personal income is, thus, simply personal income *minus* personal taxes. Some persons may experience *windfall gains* such as winning a lottery or hitting the jackpot in a horse race. Such gains are a part of personal income but not National Income. They also become part of disposable personal income after deduction of personal taxes, if any.

The National Income and other related concepts, we have discussed so far, can be arranged in the form of equations.

DOMESTIC INCOME = wages and salaries + rents + interest + dividends + undistributed profits + mixed incomes + direct taxes. (1)

NATIONAL INCOME = domestic income + net asset income earned from abroad. (2)

PERSONAL INCOME = national income − undistributed profits − profit taxes − social security contributions + government and business transfer payments + net government interest and consumer interest + gifts and remittances + windfall gains. (3)

DISPOSABLE PERSONAL INCOME = personal income − personal taxes. (4)

(g) Difficulties of Allocation of Income amongst factors

It is not always possible to find out the exact contribution of each factor input in the process of production. This gives rise to the problem of distributing the value of goods and services produced among the factors in proportion to their contribution. We have already come across such a problem in regard to the unincorporated business enterprises. Since all the necessary inputs like capital, land and initiative are provided by the owner in addition to his own labour and as it is difficult to draw a dividing line among these inputs and divide the output among them equitably, we have taken the value of the entire output as mixed income and have shown it separately. But there are other cases also where peculiar problems crop up.

We know that in every country certain enterprises or industries enjoy a special status in the market because of their size, their long experience in business, their financial strength and finally because of the popularity of their products. Other firms may not be able to compete with them. Hence, they enjoy a certain *degree of monopoly*. This will help them to increase the prices of their products arbitrarily. As a consequence, the rate as well as the level of profits would go up. The directors of the company who happen to be the share-holders may appropriate most of the *monopoly profits* by way of their salaries, fees and other perquisites. The profits they earn as entrepreneurs will have no relation with the amount of risk taking. In fact, their monopoly in the market solves the problems of risk and uncertainty. Even if there is an honest attempt on the part of entrepreneurs to find out the exact contribution of each factor they will not succeed because the remuneration for the other factors is determined in the *factor markets* depending upon their supply and demand.

The same problem will arise during the times of *inflation* also. The continuous rise in the price level enables the entrepreneurial group to reap huge profits, even though they may be required to pay more for raw materials, etc., the incomes of the factors lag behind. Wages, especially, can be revised upwards only after fresh negotiations and agreements. Interest on loans and rents on land and buildings are much more stable than wages. As such one group enjoys more income at the expense of others.

FINAL OUTPUT

We shall now study the various concepts that are related to the aspect of production of an economy. A more familiar and fashionable term than National Income is the concept of gross national product—in short, GNP. GNP is bandied about not only in economics but also in politics. This is because of its importance. It gives us a measure of the volume of goods and services produced in a year. *Gross national product can be defined as the value of all final goods and services produced annually in the nation.* Every part of the definition of the GNP requires a careful study. First, GNP includes only final goods. The value of all the intermediate goods is excluded. The necessity of omitting the value of intermediate products to avoid double counting has already been discussed in section VI of Chapter 3. For example, the price of a shirt embodies the price of cotton, thread, chemicals and stitching charges as well. All these intermediate costs and prices should not be included in the GNP. Second, there are four types of final goods which are included in the GNP. We are already familiar with them. They are: (a) Consumption goods and services, (b) Gross private investment (inventories and fixed capital goods), (c) Net exports, and (d) Goods and services produced by the government. The goods and services produced or bought by the government are consumers' goods like the policemen's services etc. and investment goods such as roads, dams, buildings or schools. It is, however, a convention to include all public purchases, whether for consumption or investment in a category called *government purchases of goods and services*. All these four streams of final output go to final purchasers of economic output. Therefore, we can look upon gross National Product as the sum of consumption goods and services, gross private investment, government purchases and net exports. We can describe it in the following equation:

$$GNP = C + I + G + E$$

Before we proceed further, we must understand clearly the distinction between intermediate and final production in regard to goods as well as services.

(a) Sale And Purchase of 'Second-Hand' Goods And Assets

We have already defined the GNP as the *unduplicated* (final) value of the *flow* of goods and services produced by the nation annually. We have also stressed the *current* character of the output of the national economy at the beginning of this chapter. It follows from this that a large number of transactions can be excluded from the National Product even without taking the trouble of finding out whether they represent productive activities or not. These transactions represent only transfers of capital assets from one holder to another.

For example, if A sells his old car to B this year, it should not be added to the National product of this year for it is not an addition to the current flow of goods and services produced by the nation this year. It is not very difficult to understand the reason why it has to be excluded from the National Product. The car was already counted once in the national product in the year it was manufactured, and sold for the first time to a customer. If, afterwards, every time it changes hands, it is included in the National Product, there would be no limit to the level to which National Product would rise. We know, this is not the only commodity which is resold several times. We find that every day thousands of second hand assets like cars, scooters, old houses and buildings, machinery and even land are sold and purchased. By adding all these transactions we can raise the National Product to unimaginable heights.

From the point of view of the National Income account all that happens when a second hand object changes hands is that there will be a change in the composition of somebody's balance sheet of assets and liabilities. For example, the balance sheet of the seller of a second-hand car will show a fall in the holdings of durable goods and a rise in his cash holding. Simultaneously, the position of the purchaser will be reversed. There will be a rise in the holding of durable assets and a decline in the cash holdings. For the economy as a whole, there is no change.

Similar is the case with regard to the sale and purchase of financial assets such as stocks, shares and bonds. Obviously, these transactions cannot form part of the National Product. We cannot increase the National Income by passing them back and forth faster and faster. We have already seen that they represent titles to ownership of part of the capital stock of the country. (If, because of prosperous business conditions they are sold at a higher price during the time of resale, the increase in price represents a capital gain but does not constitute a flow of current output).

One important qualification has to be made to the above analysis. What about the incomes of the brokers and others who deal in second-hand transactions? The commission, fees or the margin of profits they obtain should be included in the National Product as they are payments for the productive services they render in shifting the goods from the places where they are not wanted to the places where they are wanted. Also, that part of the purchaser's payment for the second-hand asset that represents the dealer's margin is part of the consumer's expenditure.

(b) Services of Government and Service Industries

There is no unanimity among economists of nations about the nature of certain services provided by the government and a few service industries. For example, every modern State has to employ a large number of workers such as policemen, military personnel, judges, civil servants etc. to maintain law and order and defend the country from external aggression and purchase goods for them to use. The goods range from sophisticated electronic machines like radars to ordinary writing paper. The expenditure is met with from tax revenue. The point to note is whether the services which maintain law and order and defence should be regarded as satisfying the wants of consumers *directly*, i.e., whether they are final products, or are they to be regarded as facilitating the production of other goods and services, i.e., whether they are intermediate products which are used up in the production process. It appears that they are partly final products and partly intermediate inputs. In so far as they protect the lives, liberty and personal possessions of citizens, they can be treated as final products. They are also essential to protect the productive system of the economy, so that the production process can go on without any interruption. Without law and order and a sense of security it is not possible to run the production process satisfactorily. Hence, we can treat these services as intermediate products. In the first case, they are supposed to cross the production boundary, and in the second case, they are considered to remain within the production boundary as they help the production of other goods and services. But in actual practice, it is not possible to draw a line between the services and say which portion is meant for protecting people and which is meant for protecting the productive apparatus of the economy. Therefore, the services of law and order and defence are taken as *final products*.

As regards other services which emanate from the other producing sectors of the economy, there is wide disagreement between the Soviet economy and other countries. For example, Soviet economists do not consider entertainment services such as dance, drama, cinema, music and personal services such as those of hairdressers as productive services on the plea that they are the ways by which the resources created by national production are used up. These services, like second-hand transactions, lie outside the production boundary. The incomes of the workers engaged in these activities are treated as transfer payments. France, for example, includes these services in the final output and excludes some government services. As regards other countries including India, the practice is to include them in the national product as final products.

There is one more interesting item. All illegal activities such as smuggling, illicit liquor, gambling etc. are *not* considered productive activities, though it is a fact that thousands of people earn income from these activities. They cannot be considered as producers according to the wishes of society. Though all illegal activities are excluded from the National Product, all legal activities are not included (services of housewives, for example). It is possible for the national product to go up when these activities are legalized. For example, when prohibition was given up in the U.S.A. the National Product increased because expenditure on liquor became legal and got included in the National Product. The same is the case with regard to gambling in Britain.

(c) Gross National Income

We have already studied that production flows generate income flows. As such, the flow of gross national product (GNP) is matched by a flow of *gross* National Income (GNI). The GNI can, therefore, be defined as the sum of all the incomes earned in the production of the

GNP. Then the GNI is always equal to the GNP, since for every rupee of the GNP produced a rupee of income is generated. Hence, the two concepts are inter-changeable. If we found the value of one we would have automatically found the value of the other. We have already seen what National Income is. Then what is the difference between the GNI and the National Income (NI)? We know that depreciation is a cost to the producing enterprise, and it recovers this cost along with other input costs when it sells its output. We have also noted in the previous chapter that indirect taxes such as excise and sales tax are also costs and they too have to be included in the price charged by the enterprises when they sell their output *in the market*. The market price of the final output should cover not only factor costs but also these two costs. If we add these two costs to the NI, we get the GNI.

$$\text{GNI} = \text{National Income} + \text{depreciation} + \text{indirect taxes} \quad (5)$$

$$\text{GNP} = \text{GNI}$$

Therefore,

$$\text{GNP} = \text{net National Product at factor cost (National Income)} + \text{depreciation} + \text{indirect taxes} \quad (6)$$

To find the value of the GNP or the GNI, we multiply the output by the market price. Therefore, it is called as gross National Product *at market prices*. From equation (6) we can find out the value of the GNP at factor cost and the net national product at market prices as well. If we exclude the indirect taxes from equation (6), we get what is known as the GNP at factor cost. But there is one more sub-flow to be considered. While discussing the flows of money in chapter 3, we have seen that a flow known as 'subsidies' starts from the government sector and reaches the producing sector. What is its significance to the GNP? A subsidy is a sort of transfer payment made by the government to the producing sector. The government uses this as a tool to encourage production and control the prices of certain essential items of consumption so that the weaker sections of the community may be able to purchase the essentials of life at reasonable prices. For example, in our country, food grains and sugar are sold to consumers through Fair Price Shops. The prices of these items in the ration shops are much below the prices prevailing in the open market. One of the reasons for the low prices is the subsidy given by the government in the production and distribution of these items. Government grants this subsidy from its tax revenue. The effect of the subsidy is to depress the market price of the output below the usual money value. If, for example, the market price of wheat is Rs 1.60 per kilogram and if government gives a subsidy of 30 paise per kilo to the trader, he would sell the subsidized wheat at Rs 1.30. On the contrary, the effect of an indirect tax is to raise the market price above its money value. If 5 Paise is imposed on the sale of subsidized wheat, then its market price would rise to Rs 1.35. Therefore, to arrive at the factor cost of the GNP, we have to deduct the indirect tax but *add* subsidies to the GNP at market prices.

$$\text{GNP AT FACTOR COST} = \text{GNP at market prices} - \text{indirect taxes} + \text{subsidies} \quad (7)$$

Subsidy covers a part of the cost of production. In our country, certain varieties of handloom cloth (particularly the cloth handled by the Khadi Gram Udyog Commission) gets subsidy because the price charged for them in the market does not cover its entire production costs. Since the objective of encouraging handloom cloth production is not to earn profits but to provide more and more employment opportunities to the labour force, government gladly accepts the burden of subsidy.

(d) Components of the GNP

The components of the GNP refer to the various types of goods and services produced in the economy. We have already noted the four types of final goods and services which constitute the GNP. We shall discuss them in detail.

(*i*) *Consumers' goods and services*

Their production comes from the producing sector. They are of three types, namely, durable goods, non-durable goods and services. It may be noted here that we include *only final goods and services* in the value of the GNP.

(ii) *Gross private domestic investment*

We have already discussed two types of investments: (a) Inventory investment and (b) Gross and net investment in fixed capital formation. The third type of investment to be added is investment in residential construction. This is a very important component of total private domestic investment. We may note here two aspects of the goods which are included in investment. Firstly, we are concerned here with the goods produced within the domestic territory of the country and secondly, with the production of the private sector. Construction of dams, roads and railways by the government which is also investment is outside the scope of the *private domestic investment goods*. This needs to be remembered when we later discuss other types of investment goods.

(a) *Inventories*: These are an important component of the GNP. Some would like to call them as *Changes in Stocks*. Inventories in our discussion refer to business inventories but not to stocks of goods lying with households. Though the underlying purpose is the same both for the business sector as well as the household sector, namely, to have an uninterrupted economic activity—production in the case of business and consumption in the case of households—the similarity ends there. The GNP is concerned with flows but not with stocks. Again, we have to make a distinction between the *current purchases* of households and the stocks brought forward from the previous year. If household inventories consist of both the previous year's stocks and current year's purchases, the GNP includes only the current purchases because the commodities that were acquired last year were already included in that year's GNP. Similarly, in regard to business inventories also, we are concerned with *additions to inventories*. We may note here that we are not concerned with total inventories but only with *changes* in them. It is the changes in inventories, not their level, which enters the GNP accounts, since only the change in inventories *requires production*. So long as the level of inventories is constant, i.e., there is no change in inventories during the year, extra production is not required. Production equals sales and changes in inventories would be *zero*. This does not mean that there are no goods in stock. The level of inventories may actually be very high. Even then nothing happens to the GNP. What is the reason ? We know that the stocks lying in inventories belong to the investment goods flow of *previous* years when they were built up.

In the light of the above discussion, any changes in the inventories of *raw materials*, *goods-in-process* and *finished goods* become part of the GNP. The change may be positive or negative. If it is positive, production would have been more than the previous year and the GNP would rise in the current year. On the contrary, if it is negative, i.e., if inventories decline in the current year the GNP would also decline. We may note here one more important point. We must remember that additions to inventories are capital (in the sense of national capital), but they need not be additions to capital goods. In fact, we have seen that they include raw materials such as oil seeds, cotton, etc., and finished goods such as food stocks, other consumers' goods and half-finished manufactures. Since these are held by business and not by the consumers, additions to inventories are counted as *net investment* because they are the output that has been produced but not consumed. If next year these goods are passed on into the hands of consumers and inventories decline investment will be negative. That means we are *disinvesting*—we are consuming faster than we produce.

(b) *Investment in fixed capital formation*: We have already defined the GNP as the *final output* which an economy gets, in the end, out of all its activity. We are not concerned with the intermediate output because it is simply a means to the end, i.e., it is used up in order to produce the final product. The final product consists of consumers' goods and services and capital goods. Capital goods are that part of the output which is put aside for purposes of adding to a nation's wealth, or its stock of capital. This is known as *investment*. As a matter of convention, investment includes the output of all those goods that have a length of life of more than one year; additions to stocks and accumulation of all foreign assets. From the point of view of this definition, the consumers' durables appear to be investment. For the moment we shall omit them and try to know the reasons for doing so at a later stage. Since we are discussing private *domestic* investment, we can postpone the issue of increase in foreign assets to a later stage.

Now, private business fixed investment consists of durable capital goods such as machinery, factory buildings, offices, stores, tools, lathes, generators, etc. These are all part of the current output. Investment, as a part of the GNP is, therefore, that part of the current output which takes the form of additions to or replacement of real capital of the economy. We have already seen that gross investment refers to the total production of these goods in a year, whereas net investment refers to the excess of output over and above the requirements of depreciation. The distinction between gross and net investment is essential for the definition of the GNP and the NNP. The concept of the GNP includes the total investment goods produced whereas the NNP consists of only net investment. The difference between gross and net investment is the value of depreciation. So also the GNP and NNP differ only by the amount of depreciation.

We have to take note of some border line cases between fixed capital formation and changes in inventories. A very important item is changes in goods-in-process or what is also known as *work in progress*. For example, progress made during a year on building a heavy machine, or a building is work in progress, but such changes come under the category of *fixed* capital formation rather than changes in inventories since the items concerned are of a heavy nature for which some progress payments are usually made. For example, if in the construction of a big factory building, some progress is made, the concerned contractors receive payments for the work done, and the value of the payments made to the contractors will be treated as a part of fixed capital formation in that year.

(c) *Residential construction*: On the face of it, this item looks as if it belongs to durable use consumers' goods and there are good reasons to treat it as such. Most of the houses are constructed not for earning rents, but to have the pleasure of owning a house and enjoy the comforts of an independent housing facility. Just like any other consumers' durable, the house goes on providing its services for quite some years. But the reasons to include residential construction in investment are much more weighty. First, wherever construction activity is undertaken by business firms, it is like the production of any other capital asset. For example, now-a-days in our country, we find that in big towns and cities various House Building Societies, most of them sponsored by the private business firms are busy with the construction of houses on a large scale. Initially, they obtain funds either from banks or from government agencies. They later sell the ready-made houses to the actual users. In every State. we find State-sponsored Housing Boards undertaking construction activity. We cannot compare this activity with the production of consumers' durables like radios, TV sets or refrigerators. Secondly, even from the point of view of individuals also, it is treated as an investment rather than a consumption purchase because it represents the purchase of a major productive asset. Thirdly, even in the case of construction of houses by individuals also we should not treat it otherwise because of the mere fact that their motive is not to earn money but to have a house of their own. Fourthly, the growth of an economy and fluctuations in growth and employment are also dependent to a large extent on the level of construction activity. Since economics is concerned not only with the structure of national income, but also vitally concerned with *changes* in the GNP, employment and the price level, residential construction can properly be included in the gross private domestic investment.

(iii) *Government output*

We have already seen that the government plays the dual role of producer as well as consumer. Here we shall study the government as part of the producing sector. What are the goods that the government produce? Obviously, it produces investment goods such as roads, dams, irrigation canals, railways, office buildings, etc. . We can call them Public Investment. All this gets included in the GNP. Secondly, the government also produces consumers goods and services such as education, law and order, defence, foreign policy, medical facilities etc. In order to produce these services that the community requires, the government, in its capacity as a production unit within the producing sector of the economy, has to employ workers like any other producing enterprise. It also has to purchase intermediate inputs such as stationery, drugs, oil, weapons etc. The only difference between the government and the other producing enterprises is that the government cannot receive profits whereas others do receive profits. Therefore, the only costs of producing these services for the government are the wages and salaries paid to its employees *plus* the costs of purchasing the intermediate goods. We may note here that the government is the sole producer as well as the purchaser of these services. As such, there is no real market in these services and the price paid for them can neither exceed nor fall short of the cost of the employees and the intermediate goods used to produce them.

(iv) *Exports minus Imports*

First, we must calculate the surplus of all the goods and services a country provides to foreigners over what they provide to it. We have to calculate: (a) the value of the total exports (including services) plus the earnings from factors of production owned abroad (dividends, interest etc. payable to the home country). Then we have to calculate: (b) the total value of what the country imports from abroad and must pay foreigners for their ownership of productive factors located in its territory. The surplus of (a) over (b) is the net export figure. But the point to note here is that exports and imports are treated as part of a nation's investment. We know that the net investment increases the productive capacity of an economy so that more incomes or satisfactions could be produced in future. It is that part of the output which is not consumed during the current year. In this respect, net exports of a country are a surplus over its consumption. They are like inventories and domestic fixed capital formation which serve as claims on the future. Whether foreigners consume them or not does not matter. They are sold to them in exchange for claims on future goods and services to be provided by them. Therefore, this aspect of net exports is called the *net foreign investment.* This is an indirect means of adding to the wealth of a country since an export surplus will increase the net foreign investment which may take the form of an increase in its holdings of financial assets such as foreign currencies or bonds or ownership of physical assets such as gold mines, railways etc.. The net exports have to be included in the GNP as domestic resources are used to produce them. It is not always necessary to achieve an export surplus. Some countries may have net imports (i.e., import surplus). In such circumstances, the GNP will decline as the net foreign investment is negative.

The National Product and Income concepts we have so far studied can be illustrated in the form of bars as given below.

(e) Measurement of the GNP : Problem of Double Counting

In measuring National Income our problem has been to find out which were productive payments and which were transfer payments, since only payments made in exchange for productive services should be included in the national income. All transfer payments are outside the

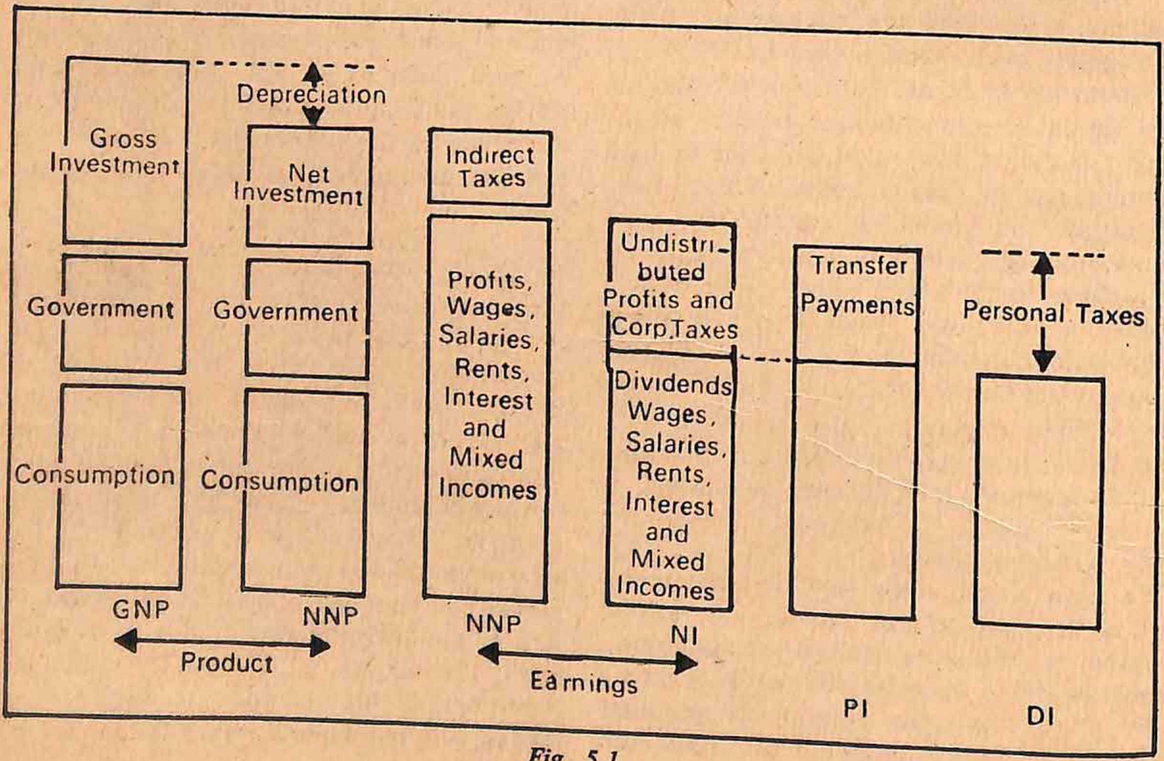

Fig. 5.1

production boundary. They neither enter nor leave the production boundary and therefore they are not part of national income. In regard to the measurement of the GNP also, another type of problem arises. It is called the *problem of double counting*. We know that the value of the GNP is the sum total of the values of the *final* goods and services produced in an economy. But in actual practice, it is not very simple to find out what are final and what are intermediate goods and services. Every production unit which sells its output to another unit takes its products as final output though the purchasing unit treats it as intermediate input from the point of view of its own activity. If we try to add up the value of the final sales of every firm to arrive at the GNP, we will get a very exaggerated figure. It does not reflect the true contribution of every production unit. It gives us a *duplicated value* (perhaps several times) of the final goods and services produced. In such a situation the value of the GNP may be several times more than the national income. Let us take the familiar example of a pound of bread. We know its price is Re 1/- in the market. We are already familiar with the process of production and the production units who have participated. The retail shopkeeper must have got it for 90 paise from the baker. To produce the bread the baker has purchased flour worth 75 paise from the miller. The miller in turn must have purchased wheat from the wholesaler for 65 paise. The farmer has sold the wheat for 50 paise to the merchant and to produce this much worth of wheat the farmer might have used seeds and fertilizers worth 10 paise. If we add up the value of the *final sales* of every producer, the value of bread would come to Rs 3.90. If this is the actual contribution of all the producers then the bread will not sell at Re 1/-. Here the value of bread is duplicated about four times. But the value of fertilizers, seeds, wheat, flour and other services are already included in the value of bread. To avoid this problem, we have to add either the value of final output or the actual contribution made by every enterprise; in other words, the *value added* by each industry at every stage of production to the GNP. The value added by the chemical industry is 10 paise, by the farmer 40 paise, by the wholesaler 15 paise, by the miller 10 paise, by the baker 15 paise and finally by the shopkeeper 10 paise. The Total value added is Re 1/- which is equivalent to the value of the final output, namely, the pound of bread. Similarly the factor incomes in the production and sale of bread also come to Re 1/- only. The expenditure of the consumers on bread is also Re 1/-. In this simple illustration, we could find that product, income and expenditure are identically equal.

$$GNP \equiv GNI \equiv GNE$$

The GNP refers to the value of the final output, the GNI is the gross national income and the GNE is the gross national expenditure. The values of the three are the same; but we are looking at them from different angles. (The sign $\equiv$ indicates identity of these concepts, i.e., it shows that they are equal by definition. This identity sign tells us that the cost of producing the GNP should be equal to the incomes generated, and the incomes generated are equal to the expenditure incurred; and expenditure is equal to the cost of production.)

The total value of sales, value added by each industry and the income generated in the process of bread making are illustrated in the following table :

Items (4) and (5) of the table prove that the total value added is equal to the value of income generated and both of them are equal to the value of the final output.

(f) Measurement of the GNP : Production Method (or Output Method, or Value Added Method)

In the modern complex economies, no single individual can point to a manufactured arti-

(*Value in Paise*)

Stage of Production (1)		*Value of Sales* (2)	*Cost of intermediate inputs or goods* (3)	*Value added by each producing unit* (4) = (2) − (3)	*Incomes generated (wages, profits etc.)* (5) = (4)
Fertilizers Seeds etc.	10	(Chemical industry)	0	10	10
Wheat	50	(Agriculture)	10	40	40
Wholesale	65	(Trade)	50	15	15
Flour	75	(Milling Industry)	65	10	10
Baked dough	90	(Baking Industry)	75	15	15
Delivered Bread	100**	(Retail Trade)	90	10	10
TOTAL	390		290	100	100

** *Value of bread*

cle—a chair, or a piece of cloth or even a pin—and say 'I made it.' The most he can say is some such thing as 'I have polished that chair,' or 'I washed the wool for that piece of cloth.' and so on. There are very few final outputs produced solely by any one industry. As a matter of fact, the final value of any commodity is created by a large number of different industries. Every firm or industry purchases raw materials and other intermediate inputs from some other firm processes them and then sells them to a different industry. To calculate the GNP we have to first find out the final output produced by each production unit. For this we have to adopt the *production or output* method. In this method we have to add up the value of the *final* goods and services produced. But a more convenient way of achieving the same objective is to adopt the *value added method* or industry of origin method. As we have already seen in our example of the production of bread, this method helps us to calculate what each separate industry added to the value of the final output. We will include only the value added by each industry to the raw materials or other goods and services that it bought from other industries before passing on the products to the next link in the whole chain of production. Thus, the value added in each and every production unit in the economy has to be totalled up to arrive at the total value of the GNP. In this method we calculate the contribution made by individual industries. Since they generate value in the process of production this method is generally referred to as the *industry of origin* method.

Whatever method we follow—whether it is the production method or the value added method—we should strictly adhere to our definitions of production and income. Therefore, whatever activities have been included in calculating the National Income should invariably be included in the calculation of the GNP. For example, the value of output kept by producers for home consumption should be included. Depreciation and indirect taxes are naturally included. As regards the calculation of depreciation we should not try to go into details, because as an eminent economist puts it, it is "an accountant's headache and an economist's nightmare." We shall take the value of depreciation as it is provided in the accounts of business firms.

The GNP is estimated by calculating the total value of the final output of consumer's goods and services, the gross private domestic investment, cost of government goods pnd services, the value of net exports—adopting the output method—and the sum total of all the values gives us the value of the GNP. The GNP can alsobe measured with the help of the now familiar concept of the production boundary. We are already familiar with the circular flow of money. If we omit all transfer payments, whether they are from the government or from business, the rest of the items in the circular flow represent either the income flow or the expenditure flow. If we assume that money is flowing like liquid in a circular pipe then the width of the pipe represents the size of the National Income and the Product. On the two sides of the pipe there will be the producing sector and the household sector facing each other. Depending upon the point at which the width of the pipe is measured we can find out which method is being adopted to measure the National Income. Since the width is the same at all points along the pipe whatever method we adopt, the National Income, the product and the expenditure are bound to be equal. If we measure the width at the point where money flows from the producing sector to the household sector, it is the value added method that is being used. On the other hand, if it is measured at the point where households receive incomes, it is then the income method. Lastly, if it is measured at the point where money flows into the producing sector, it is the expenditure method. These are shown in the following figure.

FINAL EXPENDITURE

We shall now turn to the third but at the same time very crucial aspect of the GNP, i.e., the GNP as a flow of final expenditure on goods and services produced in an economy. The final expenditure refers to the main ways in which the final product is used by the verious groups in the society. We have already seen that the types of goods and services produced from the point of view of the economy as a whole are only three, namely, consumers' goods and services, investment goods and government goods and services. (Net exports are a part of investment goods). Similarly the receipients of income are also three i.e., households, business firms and the government. We know that after taking into consideration items like indirect taxes, transfer payments and subsidies the households will have a certain amount of disposable income; the business firms are left with undistributed profits and reserves meant for replacing the old and worn out machines (depreciation charges) and finally the government will be in receipt of tax revenue collected from households and the producing enterprises by way of direct and indirect taxes. Again these three groups constitute *the three spending categories*. Households spend their incomes on consumer goods and services, business enterprises spend on investment goods and the government spends on the purchase of goods and services meant for public consumption.

The three types of goods and services produced can be re-classified into two categories only. We know that the government's production consists of investment goods and consumer goods and services. If we include the government's investment in private investment and government's consumer goods and services in goods and services produced by the private sector, we get only two types of goods and services. They are (a) consumers' goods and services and (b) investment goods. If we denote the Gross National Product as Y, the total value of consumers' goods and services as C and the value of investment goods as I, then

$$Y \equiv C + I \qquad (8)$$

Similarly, the purchases of households, business

(*Value in Paise*)

Stage of Production (1)		*Value of Sales* (2)	*Cost of intermediate inputs or goods* (3)	*Value added by each producing unit* (4) = (2) − (3)	*Incomes generated (wages, profits etc.)* (5) = (4)
Fertilizers Seeds etc.	10	(Chemical industry)	0	10	10
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TOTAL	390		290	100	100

** *Value of bread*

cle—a chair, or a piece of cloth or even a pin—and say 'I made it.' The most he can say is some such thing as 'I have polished that chair,' or 'I washed the wool for that piece of cloth.' and so on. There are very few final outputs produced solely by any one industry. As a matter of fact, the final value of any commodity is created by a large number of different industries. Every firm or industry purchases raw materials and other intermediate inputs from some other firm processes them and then sells them to a different industry. To calculate the GNP we have to first find out the final output produced by each production unit. For this we have to adopt the *production or output* method. In this method we have to add up the value of the *final* goods and services produced. But a more convenient way of achieving the same objective is to adopt the *value added method* or industry of origin method. As we have already seen in our example of the production of bread, this method helps us to calculate what each separate industry added to the value of the final output. We will include only the value added by each industry to the raw materials or other goods and services that it bought from other industries before passing on the products to the next link in the whole chain of production. Thus, the value added in each and every production unit in the economy has to be totalled up to arrive at the total value of the GNP. In this method we calculate the contribution made by individual industries. Since they generate value in the process of production this method is generally referred to as the *industry of origin* method.

Whatever method we follow—whether it is the production method or the value added method—we should strictly adhere to our definitions of production and income. Therefore, whatever activities have been included in calculating the National Income should invariably be included in the calculation of the GNP. For example, the value of output kept by producers for home consumption should be included. Depreciation and indirect taxes are naturally included. As regards the calculation of depreciation we should not try to go into details, because as an eminent economist puts it, it is "an accountant's headache and an economist's nightmare." We shall take the value of depreciation as it is provided in the accounts of business firms.

The GNP is estimated by calculating the total value of the final output of consumer's goods and services, the gross private domestic investment, cost of government goods pnd services, the value of net exports—adopting the output method—and the sum total of all the values gives us the value of the GNP. The GNP can alsobe measured with the help of the now familiar concept of the production boundary. We are already familiar with the circular flow of money. If we omit all transfer payments, whether they are from the government or from business, the rest of the items in the circular flow represent either the income flow or the expenditure flow. If we assume that money is flowing like liquid in a circular pipe then the width of the pipe represents the size of the National Income and the Product. On the two sides of the pipe there will be the producing sector and the household sector facing each other. Depending upon the point at which the width of the pipe is measured we can find out which method is being adopted to measure the National Income. Since the width is the same at all points along the pipe whatever method we adopt, the National Income, the product and the expenditure are bound to be equal. If we measure the width at the point where money flows from the producing sector to the household sector, it is the value added method that is being used. On the other hand, if it is measured at the point where households receive incomes, it is then the income method. Lastly, if it is measured at the point where money flows into the producing sector, it is the expenditure method. These are shown in the following figure.

FINAL EXPENDITURE

We shall now turn to the third but at the same time very crucial aspect of the GNP, i.e., the GNP as a flow of final expenditure on goods and services produced in an economy. The final expenditure refers to the main ways in which the final product is used by the verious groups in the society. We have already seen that the types of goods and services produced from the point of view of the economy as a whole are only three, namely, consumers' goods and services, investment goods and government goods and services. (Net exports are a part of investment goods). Similarly the receipients of income are also three i.e., households, business firms and the government. We know that after taking into consideration items like indirect taxes, transfer payments and subsidies the households will have a certain amount of disposable income; the business firms are left with undistributed profits and reserves meant for replacing the old and worn out machines (depreciation charges) and finally the government will be in receipt of tax revenue collected from households and the producing enterprises by way of direct and indirect taxes. Again these three groups constitute *the three spending categories*. Households spend their incomes on consumer goods and services, business enterprises spend on investment goods and the government spends on the purchase of goods and services meant for public consumption.

The three types of goods and services produced can be re-classified into two categories only. We know that the government's production consists of investment goods and consumer goods and services. If we include the government's investment in private investment and government's consumer goods and services in goods and services produced by the private sector, we get only two types of goods and services. They are (a) consumers' goods and services and (b) investment goods. If we denote the Gross National Product as Y, the total value of consumers' goods and services as C and the value of investment goods as I, then

$$Y \equiv C + I \quad (8)$$

Similarly, the purchases of households, business

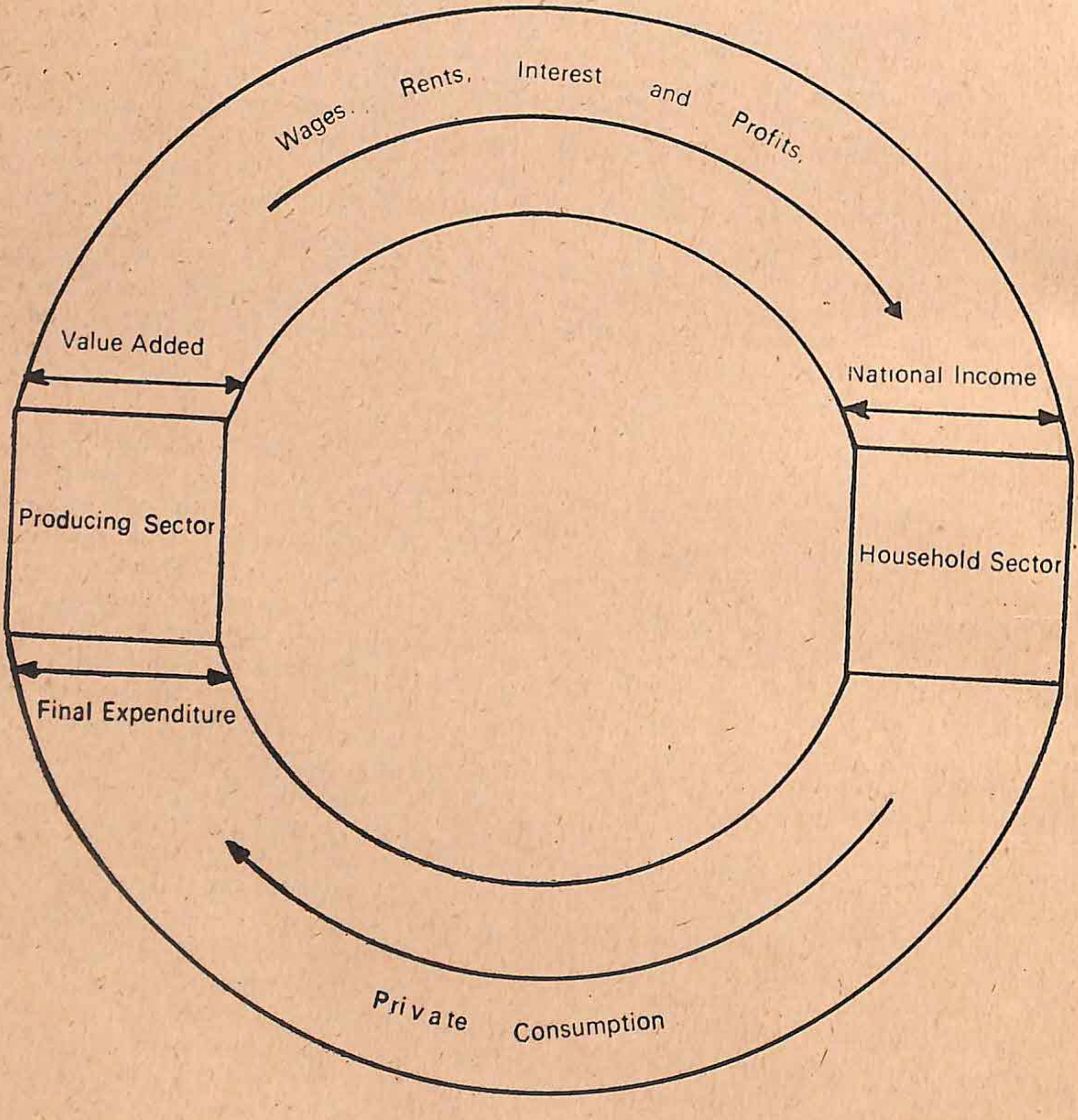


Fig. 5.2

enterprises and the government can be classified into two categories. Sales are made to meet the *final demand* of these three groups. The purchases represent their *final expenditure* on goods and services. We know that goods and services are used either for consumption or for investment.

(*i*) *Consumption*: That part of the expenditure which is meant for purchasing goods and services for current consumption is known as the consumption expenditure. This expenditure comprises the purchases of goods and services that are consumed like food, clothing, entertainment and transport by private individuals and also the current expenditure of the government on various services such law and order, defence, education, medical facilities etc. in a year. Let us not forget that we are concerned with the *final expenditure*, i.e., that part of the expenditure on *final goods* which are *used up* directly but not used as intermediate inputs to produce further goods and services. As such, the expenditure of the entire economy on consumers' goods and services comes under this category.

(*ii*) *Investment*: This comprises those goods and services that are not consumed or used in that particular year. As such, they constitute an addition to the capital and wealth of the country. The expenditure on these goods and services is called investment expenditure. This includes the value of the net exports as well. The investment expenditure refers to the total purchase of this particular type of goods both by private industries as well as by the government.

If we denote the total expenditure in the whole economy as Y, the consumption expenditure as C and the investment expenditure as I, then, the total expenditure would be identically equal to Y. Therefore,

$$Y = C + I \tag{9}$$

Thus, we find from equations (8) and (9) that the total product and the total expenditure are identically equal. In other words, the Gross National Product and the gross national expenditure are equal.

(a) Disposition of Income : Household Behaviour

We know the circular sequence that production creates income, income creates expenditure and expenditure in turn calls forth production. Let us see how the households lay out their incomes on various items of expenditure. It is common knowledge that households do not spend their entire income on goods and services. They usually *save* a part of their income and spend the rest on consumers' goods and services. Some people save more and some save less. There may be some people who dis-save, in the sense that they borrow from others. Of course, dis-saving cannot go on indefinitely. Now, when we say that a person saves a part of his income, it does not mean that this part of the income which is saved is *not* spent. Let us note very carefully that saving is the opposite of consumption, but it is *not* the opposite of *spending*. It is not being used for purchasing consumption goods and services. That is all. But saving can be used for some other purposes. It can be used to make an addition to one's own assets. For example, if a person uses his savings to acquire say, a financial asset such as a share certificate or a bond, he is still saving. The form of the asset is not important. He can directly purchase a piece of machinery. This is also a saving. The use of savings to acquire an asset, we have seen, is investment. Therefore, investment by individuals and households becomes another form of spending. The entire income may be spent on consumption goods and services and for acquiring some assets.

In reality, this is not the usual behaviour of households. The motives and forms of savings are many and varied. For example, we have seen in Chapter 3 while discussing flows of money that savings flow from households to the capital market. Most of the individuals keep their savings in the form of cash in banks. A part of the income that is saved does not get spent on consumption goods and services. In other words, saving is a *leakage* from the income and expenditure streams. Unless this leakage is matched by a corresponding increase in the expenditure either by the business or the government sector or both, the entire production offered for sale in the market cannot be purchased at the prevailing prices with the income earmarked for current expenditure by households. The deficiency of household spending creates a demand gap. In other words, the total receipts of the enterprises which make consumer goods will be less than the total amounts they laid out. As a result, inventories of unsold consumer goods begin piling up. Soon the producers of these goods get worried about *over production*. When they are not able to sell all their output, the natural thing for them to do is to stop producing so much output. That means they start cutting down on their production. As they do so, they will cut down their costs on the number of workers employed as well. In other words, they release resources from the production of consumer goods and services.

For the circular flow of production, income and expenditure to continue at the same level indefinitely the resources released from the consumption good sector should be employed and the saving done by the household sector should be spent on their employment either by the business or the government sector. In other words, there should be an *offset* to the savings of households. This means an increase in the economic activity of one of these sectors or both assuming that business and government are willing. Then the question will arise as to how the offset will take place. Our discussion of flows of money in Chapter 3 will enable us to find a solution to this problem. We have seen there that household savings initially flow into the capital market. From there they flow to the business and the government sectors through the financial institutions such as banks and insurance companies working in the money market. Now they can increase their expenditure with the household savings having reached them. The households get claim certificates from the business such as shares or bonds depending upon the type of borrowing, and bonds from the government sector for lending their savings to it. (There are other possibilities as well. The government can tax the savings of the household sector to meet its increasing expenditure. The deficiency created by household savings is compensated by the extra expenditure of the government through tax revenue or some times by the borrowings from financial institutions).

(b) Disposition of Income : Business Behaviour

Business enterprises also save part of their income. This is known as undistributed profits and other reserves. This is also a leakage from the income stream. The decision to save is taken by the firms before they declare dividends or bonuses to the shareholders. Here also the decision to save results in non-consumption by the owners of the firms. Secondly, the depreciation reserves are also a part of savings. But these savings are meant to replace the worn out machinery. Therefore, the expenditure on replacement investment will offset the savings made for the purpose. But undistributed profits and depreciation reserves together constitute *gross savings*. These are meant for replacement and for expansion of capital goods, just like the gross investment. Here we are concerned with *net savings*, i.e., savings which make it possible for the firm to increase its stock of capital. Unless the net savings are matched by the net investment expenditure by the firms, again there will be trouble. The firms which produce investment goods may not be able to sell their entire output. As a consequence, they will cut down production and workers will be laid off. The same problem as regards the household sector will come up. The offset to corporate net savings should come from one of the other two sectors or both. In other words resources should flow from the production of investment goods to either the production of consumption goods or to the government purchases of goods and services. (Here also the government can tax the excess savings of this sector and increase its expenditure).

(c) Disposition of Income : Government Sector

In modern economies it is the government sector which takes care not only of the deficiency of demand but also of the excess of demand generated by the other two sectors in the process of spending more than their incomes. The government can increase its expenditure to offset the savings in the other two sectors by borrowing from them or taxing them. To control the excess demand, it can save a part of its tax income. This will enable the resources to flow into the production of those goods and services where excess demand is experienced. In a growing economy the problem is excess demand, but not net savings. All the three sectors try to spend much more than what they earn. They try to attract resources from one another by bidding up their prices. This will result in the rise in prices. One of the ways to control prices is to encourage households and business firms to save more and more. Thus, saving is a vice as well as a virtue.

From the above discussion, we can conclude that if the savings of one sector are to be offset, one or both of the other two sectors must spend more than their incomes. As insufficient expenditure in one sector will create a gap in demand and this can be compensated only by an increase in the expenditure of another sector. That is why we have called expenditure as a *crucial* flow.

We have seen that income is divided into two categories: (a) expenditure on goods and services and (b) savings, in all the three sectors. If the National Income is denoted as Y, the expenditure on goods and services as C, and savings as S, then we get the following identity:

$$Y \equiv C + S \qquad (10)$$

We have already seen from the equation (9) that the total expenditure is equal to the consumption and the investment expenditure. Let us compare it with equation (10).

$$Y \equiv C + S$$
$$Y \equiv C + I$$

Then, $C+S=C+I$.

The Cs on both sides of the equation get cancelled out. Therefore, $S=I$.

What is the significance of this equality in terms of our analysis ? We have seen that in any particular year the net savings in an economy will create a deficiency of demand. In other words, goods start piling up. The goods may be consumption or investment goods. We know those goods which lie in stocks are part of investment. Hence any increase in saving will result in a corresponding increase in the stocks of goods and services produced in a year. Thus savings and investment become equal. On the other hand, if there is a decline in the level of savings in the subsequent period, i.e., there is an increase in expenditure while the level of inventories will go down and again savings and investment would become equal.

(d) Components of Final Expenditure

The two components of final expenditure, namely, current expenditure on consumption goods and services and the expenditure on investment goods have to be broken into subcomponents not only from the point of view of the types of goods and services but also from the point of view of the three spending groups. First of all, we shall take up consumption expenditure. This can be divided into two sub-categories : (a) private consumption expenditure and (b) public consumption expenditure. The former refers to the consumption of household and the expenditure on goods like food, fuel, lighting, clothing etc. Public expenditure, as the name indicates, refers to the consumption expenditure of public authorities, such as the expenditure incurred uy central, state or local governments on health, education, law and order, etc.

The reason why the wider category of the total consumption expenditure is divided into two components is not far to seek. The size as well as the composition of these two types of expenditures are quite different and they are determined by entirely different forces. We know that in National Accounting transactions have to be classified in such a way as to enable us to understand the working of the economy. We know that the consumption of private individuals who belong to the household sector is largely determined by their incomes, tastes and the relative prices of various goods and services that are available in the market. On the contrary, the level of consumption expenditure of the government is determined by economic, social and political considerations. For example, if the prices are rising fast, government will naturally decide to cut down its consumption expenditure. On the other hand, if the economic activity is sluggish in the country, it may decide to step up its current expenditure. As regards the level and expenditure on matters like education, law and order and defence, the decisions are largely social and political.

(i) *Private consumption expenditure*: The expenditure of individuals as members of the household sector on goods and services for current use comes under this category. There are three sub-components in this category, namely, single-use consumers' goods like food, fuel, lighting, drinks etc., services, such as entertainment, transport, hairdressing, housing, those of a doctor, lawyers etc. and finally durable-use goods such as cars, TV sets, radios, furniture etc. In regards to single-use goods and services it is not difficult to find out which is the final expenditure and which is not.

(*a*) *Classification of consumers' durables*: We have so far treated the consumers' durables such as television sets, radios, refrigerators, washing machines etc. as part of consumption goods. But we very well know that they are not *used up* just like other consumption goods. We have included all those goods which are not used up in a year in investment goods. On the basis of this definition, consumers' durables deserve to be included in investment goods since they are clearly not used up in the year in which they are produced. If they were to be included in investment it would mean that they are an addition to the national capital and wealth. Then just like any other piece of capital equipment, they would add to the future flow of output. The services produced by television sets, washing machines etc., during their life time should logically be added to the national output. In terms of the concept of production boundary, these consumers' durables do not cross the boundary but only the services rendered by them cross it as the final output. In that case, the activity of producing these services has to be treated as taking place within the boundary. This would give rise to all sorts of practical problems. For example, if we take a washing machine, we have to make an estimate of the value of the services that the owner gets from it in order to add these services both to the final expenditure and to the output of an imaginary producing sector, namely the domestic washing service sector. In computing the value added by this sector, i.e. in estimating the value the owner provides to himself we may have to deduct any other costs he incurs such as repairs and the cost of electricity consumed by the machine.

We have to face many problems if we start estimating the value of the services of the consumer durables. Further, there is hardly any objective basis for evaluating these services. It is, therefore, generally accepted that it is simply not worth while to undertake the impractical task of estimating their contribution to output. As such, all the consumers' durables should be treated *as if they were consumed or used up the moment they are purchased.* In terms of the production boundary it is only the goods that cross it but not the subsequent services rendered by them. Therefore, all the consumers' durables are included *in private consumption* and not in investment.

(b) *Purchase of new houses* : In our discussion of the national product we have included construction of residential buildings in investment. In other words, we excluded them from the category of consumers' durables. The expenditure on the construction of houses by owners and purchase of new houses by individuals should be treated as a part of the investment expenditure. Even the construction or purchases of new buildings by housing boards or by government come under the category of investment. We have already discussed the reasons for including this item in investment. Construction activity forms a substantial part of capital formation in the economy and the services provided by owner-occupied houses become an important part of the national product. In case we omit these facts and include the purchases of new buildings in private consumption the national product will be under estimated.

We know we have to *impute rent* to the services rendered by the owner-occupied houses. It is supposed that the owner pays rent to himself. The imputed rent will appear in our national income accounts in whichever way we look at it. It is an income to the house owner and also an expenditure since he is paying rent to himself. The value of the imputed rent is taken as the value added to the national product. Of course, from the point of view the owners of the houses all these three aspects cancel out since the owner receives incomes from himself for the renting of the house to himself but at the same time he is paying the consumers' expenditure on the final product, namely, rent, which gives rise to the value added. We know that in fact no transaction takes place but for the sake of consistency, we raise the national product and income by the amount of the imputed rent expenditure which is considered a part of the *consumption expenditure.*

Some might argue that since owner-occupied houses are treated as part of investment, privately owned passenger cars also should be included in investment. As a matter of convention they are treated as consumers' durables and therefore are excluded from investment. But unlike other consumers' durables such as Television sets and washing machines, private cars do not pose any problems in the evaluation of their services. If we include them in investment, how can we find the prices of their services? It is not very difficult. In every country we find cars hired out by the commercial enterprises. For example, we know that in big towns and cities in our country cars and taxis can be hired by individuals. Taxi fares are regulated by public authorities. The value of the services of a private automobile could be estimated since we can find out the comparable prices charged for the same services in the market. The value added by the private car could be added to the National Product and income. In other words, we can impute hire charges to the privately owned cars on the lines of imputing rent to owner-occupied houses. This is only to suggest that in border line cases, it is difficult to decide whether a particular price of durable goods belongs to private consumption or to investment. An interesting point to note in this connection is that if more and more people hire cars instead of owning them the National Product would go up because we have to include the value of services of the hired cars in the National Product and income. On the contrary, if people switch from owner-occupied houses to commercially rented buildings the National Product and Income remain unchanged because in both the cases the commercial rent as well as the imputed rent are included in the National Income.

In terms of the production frontier—the difference between the owner-occupied houses and other consumers' durables lies in the distinction between those things which remain inside the boundary and those that are outside it. The owner-occupied houses are supposed to remain inside the frontier and only their services cross the boundary. In the case of other consumers' durables they are treated as lying outside the boundary. Hence the services the owners get out of them are not included in the national product. But if the same type of goods are hired out by business firms, the goods are treated to be lying inside the boundary and their services cross the frontier (hired cars, for example).

(c) *Non-profit making organization*: In every economy we find many non-profit making societies such as charitable organizations, labour unions, educational institutions run by certain religious or philonthrophic groups. These are not included in the producing sector. The expenditures of these bodies on goods and services such as the wages of their employees or the stationery they purchase or the transport expenditure are treated as part of consumers' expenditure on the final product. (In case they were to be included in the producing sector, the wages of the employees would be part of the value added and the expenditure on stationery, etc. would be treated as intermediate products). In order to counterbalance the consumption expenditure of these institutions under private consumption, the payments made by individuals to them by way of subscription, fees, etc. are excluded from the consumption expenditure on the final product. These payments are treated merely as transfer payments from the household sector. On the other hand, if these organisations receive some income by way of dividends on investments from the producing sector, that will be added to their personal income. What actually happens in the case of members of these organisations giving subscriptions, fees, etc. is that a part of their income is transferred to the societies and these societies spend the money on the final product on behalf of the members under the category of consumption expenditure in the form of salaries to the employees, purchase of stationery, electricity, etc. The fees of the members do not enter private consumption as they are a transfer payment.

(d) Government Consumption

The expenditure of central, state and local governments on goods and services forms an important part of the final expenditure in modern economies. An important point to note about public consumption as a category of final expenditure on the National Product is that it includes only *current expenditures* on goods and services. It is similar to private consumption in this respect. By definition, government consumption excludes public investment and transfer payments made by the public authorities. We shall discuss public investment later. As far as transfer payments such as interest on national debt, grants to persons or state or local governments and subsidies are concerned, they do not form a part of the public expenditure on goods and services. It is important to note the distinction between transfer payments and other payments made by the government.

We have already seen that the desirable level of production of government goods and services like education, defence, law and order depends upon social and political objectives of the government. The decisions to produce and spend are taken simultaneously since government is both a producer and a consumer of these services. In every economy in the present day world defence expenditure is an important item of the government's total expenditure. Where shall we include it? Defence equipment includes long lasting goods like aeroplanes, ships, aircraft carriers, tanks, heavy machine guns, etc. Are these investment goods or consumption goods? Since they are not used up in the year they are produced, they qualify to be included in investment in government sector. Perhaps most of them are used up only during the time of war. To avoid possible complications and make the problem simple, *all the defence expenditures* are included *in current expenditures*. This is an internationally accepted practice in national accounting concepts and conventions. For example, the purchase of fighter planes by our country from other countries is part of the current consumption of the government along with the payments made to the pilots who handle them. Of course, all the payments made in kind to the defence personnel are also part of expenditure. The exception in this category is the residential accommodation constructed for the armed forces. Other important items of public consumption in a country like India are education, health, general administration and law and order.

Another important point to note about government consumption is that the goods and services necessary for public consumption are purchased from the government itself. It purchases all the output of law and order, education, health, etc. on behalf of the public because it is the government which pays wages and salaries to the employees and also for the other intermediate inputs such as stationery, uniforms, office furniture etc. As there is no actual market for these goods and services, the expenditure of the government on all the items would be equal to its costs, final payments by way of wages, salaries, etc. and intermediate payments for the goods purchased for civil and military purposes.

One might like to ask why the government consumption should be treated as a separate category since most of the output of the government such as education, law and order and health are consumed by individuals as members of the household sector. The answer is very simple. Firstly, it is not the individuals who decide about how much is to be spent on education, defence, etc. even though they have got a right to approve or disapprove of the expenditure at the time of elections. Secondly, it is essential for analytical purposes. If we show the government as the producing sector only, then we have to show its output being purchased by the households, which is not correct. Thirdly, it is not possible to allocate most of the services among groups of consumers. Which person buys defence or foreign policy? Hence, we cannot include public consumption expenditure under the category of private consumption. Otherwise it would give us a confused picture of the working of the economy. In spite of all this, one might go a step further and point out that since most of the tax revenue comes from the household sector the government should be included in the category of private individuals as a consumer. But we cannot adopt such a narrow approach in our classification. If we were to do so, the importance of the government economic activity in the economic life of the country would be lost.

(c) Private Investment

Private investment as a part of the final expenditure consists of expenditure on (i) inventories, (ii) replacement of machinery and equipment, (iii) the net addition to fixed capital and (iv) the construction of buildings, factories, store houses, etc. Therefore, any expenditure which increases the productive capacity of the economy is defined as the investment expenditure. In other words, it results in the addition to the capital and wealth of a country. In economics, investment has, thus, got a different meaning. We can call it as the *real investment* about which an ordinary person knows very little. But most of us are familiar with another type of investment about which we have already discussed. If a person purchases a bond or security, we call it investment. This is called *financial investment*. The important point to know is that there is no direct relationship between the financial investment and the *physical or real* investment. We have already noted that transactions in second-hand stocks, shares and bonds are not counted in the national product and income. From the point of view of an individual, a person who purchases a second-hand share is investing since he will get dividends on it in the future. But at the same time, the seller dis-invests and loses dividend income in the future. From the point of view of the whole economy, one man's investment is cancelled out by another's dis-investment and similarly one earns dividends while the other ceases to earn in the future. By this type of activity, we cannot increase the capital stock of a country. But there is another type of financial investment which adds to the capital of an economy. Any business firm which wants to expand its productive capacity can sell fresh stocks and shares to the public, in case its own funds are not sufficient for this purpose. The purchase of *newly issued shares* of the company by the public is also financial investment. But when the proceeds of new shares are directly allocated to new equipment or plant, the act of personal financial investment results in the addition of wealth to the community. The decisions about financial investment are taken usually by individuals who belong to the household sector but the decisions to undertake real investment are taken by *business firms*. In fact, it is the boards of directors, chief executives or small business proprietors who decide about constructing a new building, or purchasing a machine or making additions to inventories.

(i) *Expenditure on inventories*

Changes in the level of inventories bring about changes in the expenditure incurred on this item of investment. We have seen that holding inventories is both a necessity and a convenience for business firms. But at the same time, it should be noted that holding large inventories is also very expensive. It ties up a large amount of goods and funds which cost interest end also require space for storage. This is not the place to go into the dynamic aspect of inventory management and control. But, this much we can say that when sales are expected to rise, business firms would like to carry higher inventories. Again if production has to be stepped up large quantities of raw materials and other intermediate inputs have to be purchased and stored. Along with this the stocks of finished of goods may also go so that orders from customers could be promptly executed. In a growing economy, the inventory expenditure forms an important part of business investment expenditure.

(ii) *Expenditure on plant and equipment*

The expenditure both on replacement and net additions to the fixed capital come under this category. Firstly, expenditure either for replacement of old capital or for the installation of new machinery is decided not for the personal satisfaction the investment gives to the owners of business firm but is determined by the *profits* that are expected to be earned in future. Therefore, any increase in the investment expenditure depends upon the expected profits in the years to come. Secondly, an important aspect of investment is the treatment of *depreciation*. The concept of depreciation has to be looked at from the analytical as well as the practical point of view. We know that the GNP includes the value of depreciation as well. In the long run, capital goods as well as the output they produce get included in the GNP. This results in double counting. To avoid this problem the value of capital goods used up every year has to be deducted from the GNP till they are completely worn out and become useless. Thus, over the span of life of any capital asset we shall deduct its whole value from the national product. By this method we shall avoid the problem of counting the asset as well as the output produced by it in national product.

From the practical point of view, to maintain the current level of production, an economy has to keep its capital intact. In other words, its expenditure on replacement should be such that there is no decline in production. In the present day world, there is a continuous stream of new techniques of production which incorporate the latest inventions. An old power loom is not the same thing as a modern loom. New capital goods are the embodiments of new technology. The changes in technology may be such that we may not be able to get a new machine similar to the old one. There may be a change either in the productive capacity or price or both. It is very difficult to estimate in advance what exactly would be the replacement expenditure of a machine. For example, let us suppose that a textile loom was purchased by a textile mill for Rs 10,000/- some ten years ago and it is now on its last legs. Does replacement mean spending another Rs 10,000/- regardless of what kind of machine the money will buy now? Suppose the prices of looms have gone up and it is not possible to purchase a loom of the same capacity at Rs 10,000. Or let us suppose that prices remained stable; but owing to technological changes it is possible to purchase a loom of double the capacity of the old loom at Rs 10,000. In either case, we have a problem, at least as far as National Accounting is concerned. For our present purposes, we shall try to understand the problem assuming a static situation, in the sense that if the old machine was purchased for Rs 10,000 a new machine of the same capacity can also be had today for the same price. Then the problem of calculating the depreciation amount becomes simple and depreciation expenditure can easily be met.

(iii) *Expenditure on construction activity*

As far as the private sector's expenditure on this activity is concerned, the expenditure on housing by individuals becomes an important component. Again the considerations that influence construction of houses by private individuals and buildings by private business firms are not the same. In regard to the business sector, this expenditure is only a part of the total expenditure meant for the expansion of its productive capacity. Of course, an exception to this is the construction of houses undertaken by private real estate companies, i.e., private housing societies. Business firms, therefore, spend on construction of buildings only (including the housing boards) when there is a prospect of earning more profits. This is not the case with individuals who either purchase or construct new houses. The motive of earning rent in most cases is very insignificant. Of course, in big towns and cities, the desire to own a house as well as earn rental income are the two main forces which prompt wealthy persons to undertake construction of large houses. As we have already noted, the expenditure on the private sector construction activity is an important component of the total investment expenditure for the economy as a whole. Along with this the share of rental income in the National Income has been gradually going up over the years.

(f) Government Investment

Modern governments undertake large scale investment programmes such as dams, irrigation canals, roads, railways, erection of electric installations, etc. Though we have included all the public sector industrial and commercial undertakings in the producing sector (along with the private producing enterprises), from the point of view of investment expenditure, they can be included in the government sector. Their functioning is not motivated by profits. If they can earn profits, it is well and good. Profit is only one of the many motives that govern their working. For example, if the railways and post offices were to run at a loss, have we to close them down? Their main objective is public good, not private gain. Their investment expenditures are also governed by wider motives, the same is the case with the investment programmes of the government which are largely executed by the various departments of central, state and local public authorities.

(g) Exports Minus Imports

We have to study exports and imports from the point of view of expenditures incurred on them by the nationals of a country as well as nationals of other countries. Let us take imports first. In trying to find out the total expenditure of an economy, one would like to estimate the total goods and services sold to private consumption, domestic investment, and government consumption. For example, let us take the total expenditure on passenger cars by private individuals, business enterprises and government departments. Some of the cars might have been imported. Therefore, the total expenditure on cars includes expenditure on imported cars as well. The country concerned might have imported many other commodities. If the expenditure on all the imports is added to the total expenditure on domestic output, we will get an exaggerated value for the national product from the point of view of the total national expenditure. The expenditure on imports generates incomes not in the importing country, but in the country which exports them. Let us suppose that country A spends Rs 10,00,00,000/- on passenger care in a particular year. Out of this expenditure, Rs 5,00,00,000/- were spent on imported cars. Obviously, in this particular year, the national product and income generated in the country was Rs 5,00,00,000/- but *not* Rs. 10,00,00,000/- in the car industry. The imported cars, let us suppose, were purchased by disposing off foreign securities held by the individuals of this country. Thus, when commodities or services are imported, income flows out from the importing country into the exporting country. From this simple example, it is clear that unless the value of the total imports is deducted from the total national expenditure the national product from the point of view of expenditure will be larger than the national product and income looked at from the side of income and production methods.

What about exports? Just the converse applies to them. The goods and services exported by a particular country are a part of its national product and they give rise to incomes for those people who produce them. But, by their very nature, exports are not included either in domestic consumption or investment on which the nationals of the country concerned have spent their incomes. The total expenditure of the nationals of the country on consumption and investment will fall short of the national product and income *by the value of exports*. Exports are a part of the national product but expenditure on this part (i.e., exports) is incurred by foreign nationals. As such the expenditure by nationals and foreigners put together would be equal to the value of the national product. Now it is clear that exports are not a part of the expenditure *by* the nationals of the country concerned but at the same time, they are a part of the expenditure *on the national product*. Let us suppose that country B Produces cotton textiles worth Rs 3,00,00,000. The National Product and the National Income generated in this industry is, therefore, Rs 3,00,00,000. Suppose textiles worth Rs 1,00,00,000, are exported to country C. In such a situation the expenditure on cotton textiles by the nationals of country B is Rs. 2,00,00,000/- which is not equal to the national product and income of this industry. It falls short of the value of the goods exported. But the expenditure on exports of country B by the nationals of country C is on the National Product of country B. Hence the total expenditure by the nationals of country B and country C on the National Product of B would be equal to the value of its national Product. In other words, the National Product need not be equal to the expenditures by nationals of the country concerned, because some of the product may have been purchased by the nationals of other countries. This is the case as regards exports. If we turn to imports, looking at the above example, we can say that the expenditure of the nationals of country C on the textiles of country B, does not give rise to any National Product in country C. We can, therefore say that the national expenditure and the national product need not be equal. Thus, the total expenditure to which the National Product is equal is not the expenditure *by* nationals, but the expenditure *on* the national product.

THE EXPENDITURE ON
NATIONAL PRODUCT = Expenditure of nationals + expenditure on national product by foreign nationals (exports) — imports (that part of expenditure by nationals on foreign products)

In other words,

THE
NATIONAL PRODUCT = Domestic Consumption + Investment + Exports — Imports.

Domestic consumption and investment refer to the expenditure by the nationals of the country concerned, say, country B and exports refer to the expenditure by the nationals of country C. Finally imports refer to the expenditure on foreign products by the nationals of country B.

(b) Measurement of the GNP : Expenditure Method

In this method, we approach the GNP from the route of the final expenditure of the economy on consumption and investment. It is, therefore, called the consumption and investment method as well. First of all, the value of the final expenditure of private consumption has to be estimated. House rent (including imputed rent) becomes a part of the private consumption expenditure. As far as the final expenditures on the investment of the producing enterprises are concerned, the gross expenditure has to be included. Any extra expenditure on additional inventories have also to be added. In regard to the construction of buildings the final expenditure of both the producing sector as well as households have to be taken into consideration. As regards government expenditure both on investment and consumption, we have to be cautious not to include any transfer payments in the final expenditure of the government. The government's final expenditure on investment as well as on goods and services can be estimated from the wages and salaries it pays to its employees *plus* the expenditure on the purchase of intermediate inputs necessary to produce government goods and services. Finally, the value of the net exports has to be added.

The GNP = Expenditure on private consumption + expenditure on public consumption + expenditure on gross private investment + expenditure on gross public investment + Exports — Imports.

EQUALITY BETWEEN NATIONAL PRODUCT, INCOME AND EXPENDITURE

We have understood that the value of the GNP is the same whether we look at it from the angle of production, income or expenditure. Let us now understand how production gives rise to costs and incomes, incomes to expenditures and again how expenditures give rise to production with the help of a simple diagram given in figure 5.3.

Firstly, let us assume, for the sake of simplicity, that all the sectors spend their entire receipts. Then we proceed to understand the flows of product, income and expenditure. We shall start from the left. The first bar represents the total cost of producing the GNP. We know that the cost of producing the GNP consists of factor costs of all the production units of the producing sector including the government enterprises *plus* indirect taxes incurred during the process of production *plus* all the depreciation charges made while producing the national output. The next bar shows how costs are converted into receipts by households, government and business. Factor costs become factor incomes (household incomes), taxes become government tax income and depreciation charges are retained by the producing sector enterprises. Thereafter the third bar indicates the final expenditures of the three spending groups. An important point to note here is that the cost of producing the GNP is identically equal to the incomes received by the

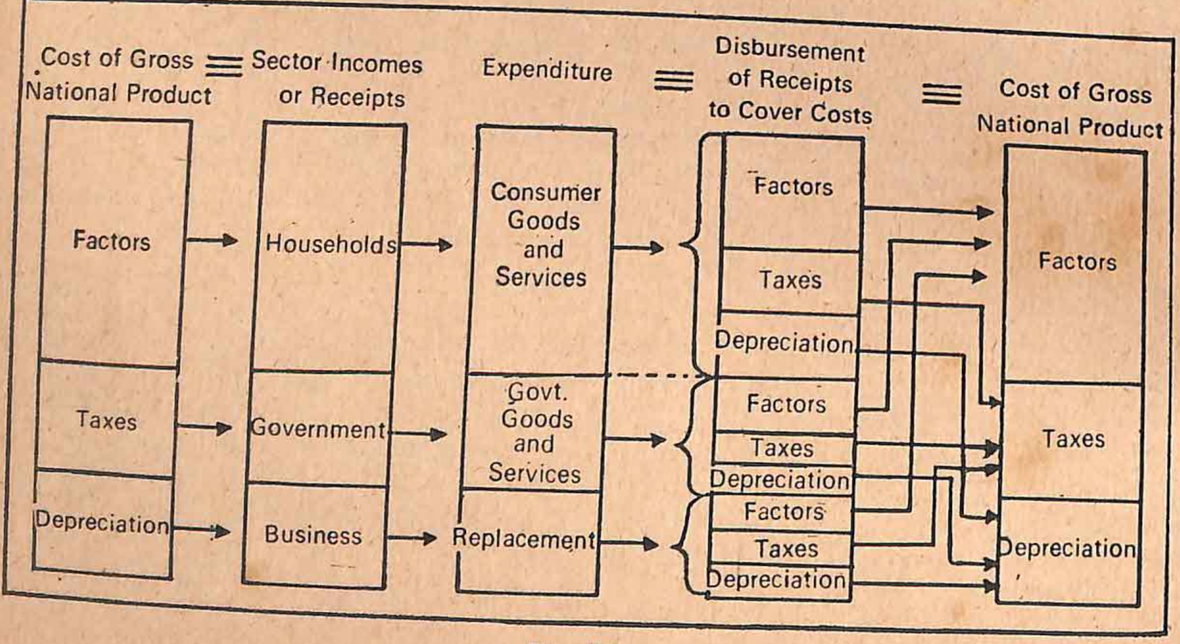


Fig. 5.3

three sectors, whereas the final expenditure does not depend on the incomes received. We have already seen that the expenditure of the three spending groups is determined by different motives. Therefore, income and expenditure cannot be shown as identically equal. Since we assume in this illustration that all incomes are spent we use an arrow between incomes and expenditure.

The fourth bar shows us how the industries which produced consumption goods and services, those industries which manufacture goods and services for the government and finally those production units which undertake the production of capital goods for other producing enterprises use their receipts to cover their various costs of production. Each of the production units uses its money receipts to cover factor payments, taxes and depreciation for its own business. (Here the costs shown are not the costs of each and every firm but only the total costs of each sector which sells to other sectors). The last and the fifth bar shows us the aggregate factor costs, the total taxes and depreciation charges. We have simply aggregated the factor costs, taxes, and depreciation charges of all the production units which sell their output to households, government and business enterprises. Thus, we have got the fifth bar which is just like the first bar. We have reached the place from where we have started. The circular flow is complete. All the production units and the government have received back a sum just large enough to cover their original costs including profits for risk taking. Now the stage is ready for another round of production which will be exactly similar to the earlier one.

A Family of National Income Concepts

In this chapter, we have understood many concepts relating to National Product and Income. We shall try to arrange them in a systematic manner. First, we get the GNP or the NNP depending upon the fact whether investment is counted as gross or net. Second, depending upon the fact whether we measure the output produced by the nationals of the country concerned (including the net asset income from abroad) or whether we measure what is produced within the domestic territory of the country we have two other concepts, namely, the national product and the domestic product. Again, a distinction can be drawn between the national product at market prices and the national product at factor cost depending upon the fact whether indirect taxes (net of subsidies) have been included or not. In all, there are eight possible ways of expressing the national product of any country, which are as follows :

(a) The gross national product	at market prices at factor cost,
(b) The net national product	at market prices at factor cost,
(c) The gross domestic product	at market prices at factor cost,
(d) The net domestic product	at market prices at factor cost,

The concepts which are mostly used are the gross national product and the national income. (The national product at factor cost). Others are not used so frequently in the day to day life of a country. Anyhow, we can arrange the above mentioned concepts in the following manner :

(a) The gross national product at market prices *minus* indirect taxes *plus* subsidies

equals

(b) The gross national product at factor cost *less* depreciation

equals

(c) The net national product at factor cost, i.e., the *national* income

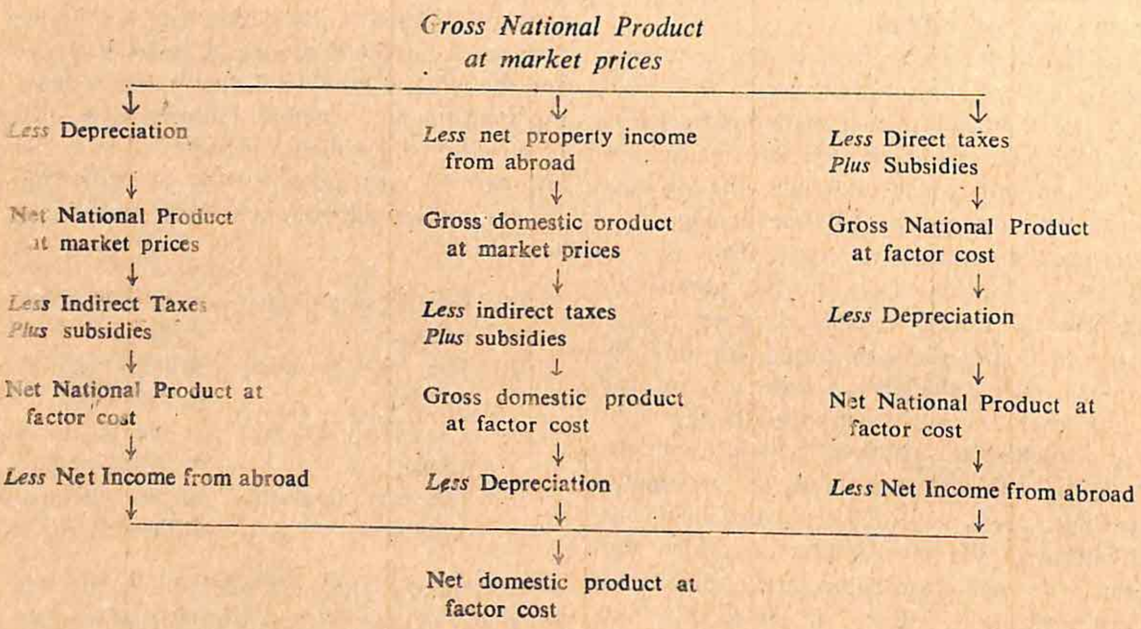
less the net property income from abroad *equals*

(d) The net domestic product at factor costs.

The way that all these concepts are connected with each other is given in the following diagram.

In the next chapter we shall discuss in detail the various ways of financing expenditure by the three sectors of the economy. We have seen that expenditure has a decisive role to play in the production process. Hence, it requires a detailed study.

Relationship Between the Various Concepts of National Product


Gross National Product
at market prices
Less Depreciation
Net National Product at market prices
Less Indirect Taxes Plus subsidies
Net National Product at factor cost
Less Net Income from abroad
Less net property income from abroad
Gross domestic product at market prices
Less indirect taxes Plus subsidies
Gross domestic product at factor cost
Less Depreciation
Less Direct taxes Plus Subsidies
Gross National Product at factor cost
Less Depreciation
Net National Product at factor cost
Less Net Income from abroad
Net domestic product at factor cost

Exercises

1. Distinguish between :
   (a) Wealth and output, and
   (b) National Capital and National Income.
2. What do you understand by the domestic income of a country ?
3. Examine the main components of the domestic income of a country.
4. What do you understand by mixed incomes ? Do you include the value of output kept for self-consumption by certain producers in the domestic income ? Give reasons.

5. Distinguish between National Income and Domestic Income. Under what circumstances would National Income be smaller than domestic income ?
6. Distinguish between national income and personal income. Bring out the main components of personal income.
7. What do you understand by disposable personal income ?
8. Define gross national product. What items will you include in the GNP ?
9. Will you include the following items in the GNP ? If not, give reasons.
   (a) Sale of a second-hand typewriter,
   (b) Sale of an old bicycle,
   (c) Purchase of a second-hand TV set by X from Y,
   (d) Purchase of an old house by A from B,
   (e) Commissions, fees, etc., charged by dealers in second-hand transactions.
10. Will you include the following in the GNP or not ? Give reasons.
    (a) Salaries of defence and police personnel,
    (b) Salaries of civil servants,
    (c) Incomes of actors, dancers, singers, etc,
    (d) Incomes of smugglers, gamblers and sellers of illicit liquor.
11. What is subsidy ? Is it included in the GNP ?
12. What are the main constitutents of the gross private domestic investment ?
13. Distinguish between business and household inventories. Which are included in the GNP ?
14. Give reasons for including the construction of buildings in investment.
15. Why are the net exports included in the investment of a country ?
16. What do you understand by *double counting* ? How can this problem be solved ?
17. In the imaginary economies described below, no other transactions take place, except the transactions that are discussed. The final sales are only to private consumption. Find out the value added by the industry of origin and value of national product.
    I. (a) Industry A sells raw materials worth Rs. 100/- to industry B ;
       (b) B sells the processed goods to industry C for Rs. 150/- ;
       (c) Industry C sells the goods for Rs. 200/- to private consumption.
    II. (a) Firm A sells intermediate inputs for Rs. 200/- to B ;
        (b) Firm B sells the manufactured goods for Rs. 200/- to firm C, and for Rs. 100/ to firm D ;
        (c) Firm C sells its goods to D for Rs. 250/- ;
        (d) Firm D sells the goods for private consumption for Rs. 425/-.
    III. (a) Industry A sells for Rs. 300/- its semi-finished goods to industry B, and for Rs. 200/- to industry C ;
         (b) Industry B sells the finished goods for Rs. 250/- for private consumption and for Rs. 150/- to industry C ;
         (c) Industry C sells for Rs. 400/- for private consumption.
    IV. (a) Industry A sells its goods to B for Rs. 400/- and for private consumption for Rs. 200/- ;

(b) Industry B re-sells the goods for Rs. 500/- to Industry C ;
(c) Industry C sells for private consumption for Rs. 575/-.

V. Industry A sells its products for Rs. 100/- to B ;
Industry B sells it for Rs. 140/- to industry C ;
C sells all the output to private consumption.
The National product is Rs. 200/-.
What is private consumption and what is industry C's value added ?

VI. Industry A sells his goods for Rs. 100/- to B and for Rs. 200/- to C.
Consumers divide their expenditure equally between B's goods and C's goods.
The National Product is Rs. 450/-.
Find the value added by B and C.

VII. Industry A sells its goods to industry B for Rs. 200/- ; B, whose value added is Rs. 400/-, sells half of its output to C and half to D. Industry C sells all its output to industry D. D, whose value added is Rs. 300/-, sells all its output to private consumption for Rs. 1300/-.
Find out the value added by industry C.

18. Distinguish between consumption expenditure and investment expenditure.
19. Examine the consequences of the net savings by the household sector when there is no offset to it in the other two sectors.
20. Give reasons for including consumers' durables in the private consumption expenditure.
21. What do you understand by imputed rent ? Do you include it in the GNP ? Give reasons.
22. Distinguish between private consumption and public consumption (government consumption). Explain the factors that determine them.
23. Differentiate financial investment from physical investment. What will be the effect on physical investment if sale and purchase of old shares increase rapidly in the market ?
24. What do you understand by *keeping the capital intact* ?
25. Distinguish between expenditure *on* the national product and expenditure by nationals of a country.
26. Explain under what circumstances the expenditure by nationals will be less than the value of their national product.
27. Suppose a country has import surplus. Is the expenditure of the nationals of that country more or less than the value of their national product ?
28. Distinguish between :
    (a) The GNP market prices and the GNP at factor cost ;
    (b) The GNP at factor cost and the NNP at factor cost ;
    (c) The NNP at market prices and the NNP at factor cost ;
    (d) The GNP at market prices and the NNP at factor cost ;
    (e) The GNP at market prices and the NNP at market prices ;
    (f) The GNP at market prices and the GNP at factor cost ;
    (g) The GNP at factor cost and the NNP at factor cost ;

(h) The GNP at market prices and the NNP at market prices ;

(i) The NNP at factor cost and the GNP at factor cost.

29. Distinguish between the income method and the Production method of measuring the national product.

30. What are the components of the national product from the point of view of expenditure ?

(b) Industry B re-sells the goods for Rs. 500/- to Industry C ;
(c) Industry C sells for private consumption for Rs. 575/-.

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    (c) The NNP at market prices and the NNP at factor cost ;
    (d) The GNP at market prices and the NNP at factor cost ;
    (e) The GNP at market prices and the NNP at market prices ;
    (f) The GNP at market prices and the GNP at factor cost ;
    (g) The GNP at factor cost and the NNP at factor cost ;

(h) The GNP at market prices and the NNP at market prices ;

(i) The NNP at factor cost and the GNP at factor cost.

29. Distinguish between the income method and the Production method of measuring the national product.

30. What are the components of the national product from the point of view of expenditure ?

CHAPTER 6

Sources of Financing the Final Expenditure

In the previous chapter, we have studied how the National Product could be reached from three different routes, namely, from the side of income, production and expenditure. We have also seen that if each sector spends its entire income on goods and services the National Product, income and expenditure would be identically equal. We have further noted that in case, there is a net savings by one sector, one of the other two sectors or both of them put together have to increase their expenditure to *offset* the net savings. This will ensure an uninterrupted flow of expenditure equal to the product and income. In such a situation, the circular flow of production, income and expenditure will repeat itself endlessly and the volume of the flow will remain constant. Now, we shall try to understand how the three sectors of the economy, namely, households, business and the government procure the necesary funds to finance their final consumption and investment expenditures. In other words, we shall study the various sources from which they get incomes to meet their expenditure. Of course, we have already seen that the main source for the household sector is its income from which most of the expenditure is financed. As regards the business sector, they finance their expenditure mostly from retained profits and depreciation charges. The Government relies mainly on tax income for its spending. But, there are some other sources from which all the three sectors get money receipts. These require a detailed study.

Before we proceed further, it may be noted that we are going to study this topic in a static setting, in the sense that one sector's extra expenditure is *offset* by another sector's *net saving* and *vice versa*, so that the total expenditure in the economy remains the same. Of course, in present day economies, all the three sectors can spend much more than their incomes at one and the same time and this may result in more production and more income in the next round. The question is from where do they get additional funds? The answer is very simple. They can borrow from commercial banks. The banking system as a whole manufactures what is known as *credit* and it is credit creation which is at the bottom of the extra expenditure of many households, business firms and government agencies. But, we need not go into the process of credit creation, its utilisation and consequent changes brought about in the flows of production as well as income, as this will lead us to a dynamic analysis of our topic. This is not the place to discuss dynamic issues. If we can understand the basic forces which determine the spending behaviour of the three sectors of the economy, new forces which enter in a dynamic setting, i.e., the real world situation, will not be much of a problem for us to follow. We shall, therefore, proceed on the assumption that the volume of the circular flow remains constant.

HOUSEHOLD CONSUMPTION

The household sector is the largest, most familiar, and in many respects more important than the other two sectors of the economy. It is the largest because in every country it is a sector which provides productive services to the business and the government sector and to the society which receives a major share of the national income. For example, the income of this sector in terms of the GNP was 72.2% in 1972-73 in our country. Again in the same year, the private final consumption expenditure was 74.7% of the GNP. In other words, the expenses of the families and individuals as members of the households constitutes about three-fourths of the total expenditure in our country. It is the most familiar sector because every one of us, whether he is a producer or a consumer belongs to one of the millions of households in the country. As members of families which constitute households, we are familiar with the working of this sector. It is more important than other sectors because the entire economic activity, as we have already seen, in the ultimate analysis, geared to provide goods and services to satisfy the wants of the members of the household sector. There may be minor differences in the share of this sector as a receiver of income and a saver and spender of money for consumption, among different economies. But, it does not affect either its size or its importance.

An individual's expenditure depends upon his income. The more his income, the more will be his expenditure. There may be some people who consume but who do not earn income. For example, children and old people do not earn incomes, but spend at the same time. Or there may be other members, in addition to the head of the family, who earn incomes. Therefore, it is household income which determines household expenditure. Another important point to note is that the consumption expenditure of households depends on their *disposable personal income* not on the incomes they earn in the production process. As a rule the disposable personal income will be less than the private income of the households because of the fact that the volume of the inflow of money receipts into this sector is reduced by the outflow of payments such as taxes made from this sector. Since our aim is to know the various sources of income of the households from which they finance their spending, we shall study the constitutents of money receipts and transfer payments by this sector.

In any particular year, the National Income (the net national product at factor cost) belongs to the four factors of production whose owners belong to the household sector. The members of the household sector get wage incomes in the form of wages, salaries, other payments in kind, and non-wage income in the form of rent, interest, profits and dividends. But, the size of the inflow of this income is much smaller than the actual amount of income they have earned. Out of the income they have generated, a part is saved by the producing enterprises by way of retained profits and other reserves, another part is taken away by the government in the shape of direct corporate taxes and individual contributions by workers to provident fund and other social security schemes like insurance, etc., claim their share from the earned income. All these deductions reduce the size of the income earned. Even after receiving the income, households have to pay direct taxes such as central income tax, and other local taxes such as sanitary fees levied by the municipalities to maintain civic amenities. For example, these direct taxes on the households amounted to Rs 1220 crores in 1973-74 in our country. All the tax payments, whether they are made by the corporate sector or households are a sort of compulsory transfer payments because they are collected by the government not in return to any specific productive service. But, an important point to note is that the members of households also receive some transfer payments. For example, pensions of old people, scholarships of students, interest on public debt, etc., are another source of spending. Gifts and remittances from abroad also add to the purchasing power of the receipients. On the one hand, we find some transfer payments going out of the households and some transfer receipts flowing in. We have to deduct the total payments from the total transfer receipts to find out the *net transfer receipts* of this scetor. It is the net transfer receipts which are the third source of spending—wage and non-wage income being the other two sources.

Now, we understand that there are three sources of income for the households to spend from and similarly there are three types of goods and services which they purchase for consumption. It is neither necessary nor practicable for all the households to purchase all the three types of goods and services. It is the level of disposable income which determines the volume as well as the type of expenditure. By and large, all the three sources of income can be treated as a single entity in studying the spending behaviour of households. Most of the expenditure on single-use consumer goods and services like transport, entertainment and medical care is common to most households. Even here, we can find people with high incomes purchasing superior types of goods, using personalised transport like cars and scooters, spending on different types of entertainments like attending special shows performed by great artists inside and outside the country. As far as consumers' durables are concerned, not all the households can afford to purchase them because of the high initial expenditure involved. Only those households which are much above the *break-even point*, purchase these items. (By break even point, we mean a situation where the income and expenditure of the household are just equal.) In modern times, commercial banks and other financial intermediaries such as chit funds and thrift societies come to the rescue of those households who want to purchase consumer durables but at the same time do not have enough funds. These financial institutions provide necessary *consumer credit* to purchase these items. At this stage we cannot go into the details of financing of this nature as this will lead to dynamic issues.

We should not forget another important aspect of the household behaviour we have touched upon in the previous chapter. It is again the household sector which provides most of the savings necessary to increase the productive capacity of the economy. For example, the household sector in our economy accounted for 75.6% of the total savings of the country in 1973-74. Just as all households do not purchase all types of consumer goods, again all households do not necessarily save. Saving does not depend merely on the desire to save but on the capacity to save. The capacity to save depends on the level of income. Saving is almost automatic with the families whose incomes are quite high. On the contrary, there may be some households, below the break even point. They finance their consumption expenditure by borrowing from others. But, on the whole, this sector emerges as the biggest saver. Leaving alone the households which receive high non-wage incomes, we find people who receive high wage incomes trying to save more in order to acquire either more consumer durables or income yielding assets—both physical and financial.

Thus, the study of the household sector with regard to the sources of spending and the types of consumption goods and services reveals that consumption expenditure is by far the largest category of spending in the GNP. Second, it is also the biggest sector in terms of the incomes received and savings made. Third, we may recall here our discussion in the previous chapter that the consumption expenditure alone cannot ensure the circular flow without private investment and government expenditure.

PRIVATE FIXED INVESTMENT

We have already seen that the private sector enterprises' investment expenditure falls under three categories : (a) expenditure on machinery and equipment (b) expenditure on inventories (changes in stocks) and (c) expenditure on construction. The sources of financing the investment spending can broadly be divided into four categories : (a) Dent on private savings; (b) internal surpluses of the enterprises; (c) subsidies given by the government; and (d) the net capital transfer receipts. If the production units have no ambitious plan to expand their productive capacity their retained profits and depreciation charges would be enough to meet the requirements of the gross fixed investment. But, in any growing economy net investment becomes necessary, because of the growing demand for goods and services. For this purpose, the producing enterprises require additional funds. Further, the entire retained profits connot be spent on investment because firms should have some funds in reserve to meet unexpected contingencies. Though some of the firms may be able to finance their investment expenditure entirely from internal sources for the sector as a whole it is not possible to do so. For example, the private corporate sector in our country could save only 6.5% of the total savings in the economy in 1973-74, whereas its investment was 16.4% of the total investment expenditure of the economy. In absolute terms, its savings were Rs. 432 crores but investment was Rs. 1199 crores. The gap between saving and investment was made good by obtaining the savings of the household sector and borrowings from the commercial banks.

(a) *Dent on private savings*

The private sector production units try to attract the savings of the household sector either by direct borrowing or by sale of new issues of shares. Some of the households lend as well as purchase new shares. As a consequence, a part of the household savings flows into the producing sector. This flow may be large in the developed countries where people are quite aware of the investment opportunities for their savings. In a country like India, where people give more importance to the safety of funds rather than high earnings by way of interest or dividend income, the flow of household saving is quite insignificant. For example, the dent on this sector was only Rs. 49 crores in 1973-74 in our country in terms of its investment in shares and debentures. But the point to note is that most of the savings of this sector go to finance the investment expenditure in an indirect manner. For example, the net financial savings of this sector flows into bank deposits, life insurance companies, provident fund, etc. These institutions lend to the private sector enterprises. Thus household savings reach the producing sector indirectly.

(b) *Internal surpluses*

We are already quite familiar with this source of finance. Most of the companies meet most of their expenditure from their retained profits and other reserves. Their borrowings from the other sectors may be marginal. In the advanced countries like the U.S.A., about 75% of the investment expenditure is financed by retained earnings of companies.

(c) *Subsidies*

Subsidy is a transfer payment. Hence it is not included in the national product and income. But as far as expenditure is concerned it becomes a part and parcel of the sources of finance to be spent on the goods and services produced. The Government gives subsidies to certain industries so that they could increase their productive activity either by establishing new units or by expanding the existing units, in terms of its economic and social goals. For example, in our country industries which produce agricultural inputs like fertilizers and tools get some subsidies. In addition, if certain industries are prepared to establish new units in the backward areas of the country they would receive much larger subsidies by way of free grants, supply of water and power at concessional rates, etc.

(d) *Net capital transfer receipts*

Private sector manufacturing units have another source of finance to carry out their programmes of increasing their stock of capital. If they want to establish new units or expand the old ones, they can borrow from the government and other financial institutions. For example, in our country, the Industrial Financial Corporation of India gives long term loans to industries to augment their productive capacity. So also other government financial organizations give loans and purchase stocks and shares of the private sector industries. The flow of funds from the government and other public sector institutions into the private sector can be called as capital transfer receipts. On the other hand, some big private sector industries like the Tatas, Birlas, Dalmias, etc., in our country may purchase stocks and shares of the public sector manufacturing units. This constitutes outflow of capital. This has to be subtracted from the capital receipts of this sector, to arrive at the net capital transfer receipts. These receipts have got a significant role to play in private fixed investment in the developing countries like India. For example, in 1974-75, the net capital transfers from the government sector to the other two sectors were of the order of Rs. 60 crores.

In a developing country like India, the capital requirements of the private sector industries cannot be met by internal resources and investments from the household sector. Hence, the government and the public sector financial institutions have to play a leading role in providing finance for investment purposes. In India, a number of financial institutions both at the Centre and in the States have been providing long term finance to Indian industries. For example, in 1976-77 an amount of Rs. 589.5 crores had been disbursed to the industries by various term-lending financial institutions.

GOVERNMENT EXPENDITURE

The Government's spending consists of consumption as well as capital expenditures. But, most of the expenditure is incurred on consumption goods and services like defence, education, law and order, medical care, etc. Investment expenditure accounts for about one-third of the total expenditure of the government in countries like India. The investment expenditure takes the form of direct lending to public sector undertakings, purchase of shares of these enterprises and the construction of buildings for defence, education, health, houses for government servants, etc. For the purpose of expenditure, we have already included all the public sector production units in the government sector. As such, the investment expenditure undertaken by these units becomes a part of the total expenditure. For example, in our country the government consumption expenditure was 66% of the total expenditure and the rest was on investment expenditure during 1973-74.

As regards the sources of income to meet the two types of expenditure, we have already noted that tax income is the main component. The other sources are property income, net transfer receipts and net operating surpluses of public sector units. We shall study each of these sources in detail.

(a) *Direct and indirect taxes*

Taxes of public authorities are divided into two

untrie. ike
ce of income. For
direct taxes in total
and was 71% in 1973-74 in
Ind

osed on commodities
le, the entertainment
hen they see movies, is
the important indirect
As es, excise duties, sales
etc. Customs duties
on the imports and
(i) enerally every country
most exports some other
and p The main purpose
panies, is to protect the
O competition
some revenue from
s are imposed mainly
uties are levied mainly
the country enjoys a
in the world markets.
try export taxes are
is textiles, because India
is one o rters of these com-
modities in profits enjoyed
by the exporters taxed not only to
btain revenue but ensure equity.

Excise duties are on commodities at
the stage of their p ion. They become a
part of producti ts. These duties cover
ery large commodities. For
mple, clo es, scooters, refri-
tors, a tor spirit, electrical
avily. These duties
modities which are
sales tax is levied
f final sale of com-
e poor alike have to
to lessen the burden
essentials of life are
ales tax is an important
te governments in India.
ect taxes, namely taxes on

motor vehicles and on entertainment also yield substantial revenues to state governments.

(b) *Property Income*

Public sector undertakings and other government departments also own property like buildings, land etc. As the activities of government have been continuously increasing, it has become necessary to own more and more property and use it for the welfare of the community. For example, in our country, income from entrepreneurship and property constituted about 7% of the total receipts of the government, in 1973-74.

(c) *Net transfer receipts*

So far we have discussed tax and property incomes. The government makes transfer payments to certain departments under it as well as receives transfer payments from them. The receipts by the government are known as non-tax income or revenue. For example, essential services like railways, posts and telegraphs, road transport, coins and currency printing, electricity generation and distribution, water supply, etc. are undertaken by separate departments. In case any department runs at loss, the government transfers funds from its revenue receipts. On the other hand, if these departments make profits, they transfer a part of them to the governments revenue. If the net transfer receipts are positive, the government can utilize this non-tax revenue to meet either consumption or investment expenditure.

(d) *Net Operating Surplus*

Like the private sector production units, the public sector industrial and commercial undertakings also are expected to earn at least a reasonable return on their capital invested. If we deduct the costs of production from the total value of sales, we get what is known as the gross operating surplus. This is synonymous to the gross profits in the private sector. From the gross operating surplus, the interest payments on loans, direct taxes and the fees of directors have to be deducted. The net amount that remains with the producing unit is termed as the net operating surplus. It is supposed to be the main source of the investment expenditure of the unit concerned. Of course, in India, the position is not satisfactory because most of the public sector units are not able to generate enough surpluses to finance their investment programmes.

NATIONAL PRODUCT, INCOME AND EXPENDITURE IN A TABULAR FORM

We have already seen that the identity of these three flows in an economy in the previous chapter. We shall now present them in the form of a table to highlight the idea of how income is generated by each sector of the economy and at the same time how value is added in the production process by all the sectors of the economy. The final expenditure follows income generation and it can be *vice versa*, since they flow in a circular fashion; one gives rise to the other. In presenting the table, we shall follow the guidelines given by the Statistical Office of the United Nations. The guidelines were given in its book *A System of National Accounts, Studies and Methods*, published in 1968.

We know the three economic activities of an economy, namely, production, consumption and investment. The value of production would be equal to the income received in the production process and the final expenditure on consumption and investment would be equal to the value of the total product. We shall present below an imaginary statement of accounts for the entire nation.

The above statement can be put in the form of a table. In preparing the table, we shall follow the usual convention, namely, incomings will be shown in the rows and outgoings will be shown in the columns.

A BALANCE STATEMENT OF THE ACCOUNTS FOR THE ECONOMY

Outgoings					*Incomings*			
P	C	I	R		P	C	I	R
1	2	3	4		1	2	3	4
	210			Consumption goods	210			
		47		Capital goods	47			
			50	Exports	50			
52				Imports				52
255				Gross domestic income		255		
		— 19		Capital consumption		— 19		
		— 2		Net lending abroad				— 2
	26			Saving			26	
307	236	26	50	Total	307	236	26	50

P=Production; C—Consumption; I=Investment;
R=Rest of the world.

	1	2	3	4	Total
1. Production		210	47	50	307
2. Consumption	255		— 19		236
3. Investment		26			26
4. Rest of the world	52		— 2		50
	307	236	26	50	

From the above table, it is easy to understand how the three principal methods of measuring the gross product can be reconciled with one another. The first row gives us the value of the total production in the economy, so also the first column. The second row and column give us the total consumption in the economy; third row and column indicate the net investment that took place in the economy and finally the fourth row and column give us the value of the country's export and import trade.

In the next chapter we shall adopt another method for estimating the national product and income. It is generally called as the social accounting method. In this method, the economic activities of the economy are presented in an accounting framework and the framework gives us the value of the national product, income and expenditure. To this, we shall now turn.

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			50	Exports	50			
52				Imports				52
255				Gross domestic income		255		
		— 19		Capital consumption		— 19		
		— 2		Net lending abroad				— 2
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CHAPTER 7

System of National Accounting

In the earlier chapters we have studied the various economic activities that take place in an economy in the three sectors, namely, households, producing enterprises and the government sector. We have further distinguished the activities of those that contribute to the national product and those which do not and discussed each one of them in great detail. We have also measured the national product from the income, the production and the expenditure side. In this chapter, we shall try to develop an accounting framework, based on the principles of the double entry book-keeping system, and show how all the economic activities can be linked together in an interlocking system of accounts.

We have divided the entire economy into three sectors depending upon the type of activity they perform. So also different types of accounts can be set up for one and the same sector. For example, as we have seen in the first chapter, business firms generally maintain three types of accounts. Similarly, we can set up three important accounts for every sector of the economy, namely, (a) Production or manufacturing account, which shows only the payments and receipts arising out of the productive activities; (b) Appropriation account, which shows all the receipts and payments—including transfer payments and (c) Capital account or saving and investment which shows the assets and liabilities of the sector. (These accounts can be set up for every single production unit in a sector, if so desired, and can be consolidated. The consolidated account shows the transactions of this sector with other sectors. The inter-sectoral transactions get deleted in the process of consolidation). Or, every sector can be allotted only one of the three above accounts, and all the activities can be entered under the credit and debit items. Then the sectoral accounts can be consolidated to arrive at the national income and product account. We shall follow the second method in our study.

Before we set up different accounts for different sectors we have to understand some basic principles about the double entry accounting system in the context of national accounting. First, every account has to be *internally as well as externally balanced.* As regards the internal balance, for every credit item there should be an equivalent debit item. The external balance requires that for every debit in one account there should be a corresponding credit in another account, and *vice versa.* Let us take an imaginary economy and understand what these two balances are. Suppose in an economy there are only two sectors, namely, the producing sector and households, and the value of production is Rs. 100/-. The national income is also Rs. 100/-. Rs. 80/- go to wages and Rs. 20/- to profits. The household sector spends its entire income on consumption. The accounts of the two sectors will be as follows :

PRODUCING SECTOR ACCOUNT

Debits		Credits	
Payments to factors of production:		Value of output sold (Consumption)	Rs 100
Wages	Rs 80		
Profits	Rs 20		
TOTAL	Rs 100	TOTAL	Rs 100

HOUSEHOLD SECTOR ACCOUNT

Debits		Credits	
Consumption (value of output purchased)	Rs 100	Incomes received	
		Wages	Rs 80
		Profits	Rs 20
TOTAL	Rs 100	TOTAL	Rs 100

The above two accounts are in the internal balance, in the sense that in every account credits and debits are equal. They are also in the external balance because every debit in one account has a corresponding credit in another account and vice versa. This example, has helped us to understand the following rules ;

(a) Income should be shown as a credit, and consumption as a debit in the concerned sector account;

(b) Production should be shown as a credit, and factor cost as a debit in the production account.

In the above example what happens when the household sector, for example, saves Rs. 20/- out of its income ? Let us see how the accounts look like.

THE PRODUCING SECTOR ACCOUNT

Debits		Credits	
Payments to factors of production:		Value of output sold:	Rs 80
Wages	Rs 80	Inventory investment	Rs 20
Profits	Rs 20		
TOTAL	Rs 100	TOTAL	Rs 100

THE HOUSEHOLD SECTOR ACCOUNT

Debits		**Credits**	
		Income received	
Consumption (value of output purchased)	Rs 80	Wages	Rs 80
Personal savings	Rs 20	Profits	Rs 20
TOTAL	Rs 100	TOTAL	Rs 100

The above two accounts are internally balanced, but not externally. The producing sector inventory investment has no corresponding debit in the household account and personal saving in the household account has no corresponding credit in another account. To bring these two accounts into external balance, we have to set up another account, namely, Savings and Investment Account for the economy as a whole. The account will be as follows:

THE SAVINGS AND INVESTMENT ACCOUNT

Debits		**Credits**	
Inventory investment	Rs 20	Personal savings	Rs 20
TOTAL	Rs 20	TOTAL	Rs 20

From the above, we learn the following rules:

(a) The investment in the producing sector account is a credit.

(b) Personal savings in the household sector account is a debit.

(c) The investment in the savings and investment account is a debit, and personal savings is a credit item.

Having understood a few basic rules of accounting, we shall now proceed to set up accounts for different sectors. We shall use one account for one sector so that every sector has a different type of account. For example, the household and the government sectors will be allotted the appropriation account, the producing sector will be shown by the manufacturing account, and the capital account will be used for the savings and investment of the entire economy. Finally, a consolidated account will be used for the *rest of the world sector* in which the value of the exports and imports of the country are entered. This account consists of both the capital and consumption transactions. We shall take up every sector and make necessary entries and consolidate them to arrive at the National Income and Product Account.

THE HOUSEHOLD ACCOUNT

We are quite familiar with the economic activities of this sector. The main activities of this sector are to sell the productive services to the two sectors, receive income in return and spend it on the purchase of consumption goods and services. Individuals as members of households are involved in some other activities. They pay taxes to the governments, save a part of their incomes, receive transfer payments from the other two sectors and receive remittances and gifts from abroad. All these transactions have to be entered into the appropriation account of this sector. This account shows all the current receipts and payments of this sector. (Transactions among the members of the sector get cancelled out when we prepare the appropriation account for the entire sector). Before we enter the transactions in the account, we have to decide what are the debits and what are the credits. The receipt of income in the shape of wages, rent, interest and profits is a credit. The household consumption expenditure is a debit. The taxes to be paid to the government are debits. Transfer receipts from the other two sectors are credits. The savings of households are debits. Remittances and gifts received from abroad are credits. We have then covered all the transactions. On entering all these items, the household sector account will look like this :

HOUSEHOLD SECTOR ACCOUNT

Debits	Credits
Private consumption Direct taxes on households Savings by households	Wages, rent, interest and profits Transfer payments from government and business sector Remittances and gifts from abroad
Expenditure and savings of households	Incomes of households

The two sides of the account are expected to be equal. In case, credits are more than debits, the excess of credits should be represented by adding an item to the household savings to the debit items. On the contrary, if the debits are more, it means that the expenditure is more than the income. To make the two sides equal, an item representing borrowings could be added to the credit side of the account. Thus, the convention of preserving equality between the two sides of the account could be ensured.

GOVERNMENT ACCOUNT

For accounting purposes, we shall not include the public sector industrial and commercial undertakings in the government account. They will be treated as a part of the producing sector along with the private sector production units. Therefore, in the government account, we show here only the consumption expenditure and current receipts of the government together with the payments made by it. We shall use, just like in the household sector, a consolidated appropriation account which shows all the current receipts and payments of the government. Let us see the items that are to be entered in the account. The Government's expenditure on goods and services known as public consumption is the major item on the side of debits. We know that consumption is a debit item in the account of the concerned sector. The main source of this consumption expenditure is tax revenue. Direct taxes paid by firms such as corporation taxes and taxes on undistributed profits will be credits. Direct taxes paid by the households are also entered on the credit side. Then come indirect taxes. These are collected by firms when they sell goods and services in the market and are passed on to the government. For example, sales tax on cloth, cigarettes, etc. is collected by the firms when sales are effected. Subsequently, they pass on the indirect tax money to the government. Therefore, indirect taxes are entered on the credit side. There are two more items to be decided. The government makes transfer payments to households and the business sector. Old age pensions, grants to students, etc. go to the household sector while subsidies go to business firms. Transfer payments have to be entered on the debit side. Just like households, the government also saves as well as borrows. The savings of the government have to be shown on the debit side. Then all these items would be presented in the following accounting form:

GOVERNMENT SECTOR ACCOUNT

Debits	Credits
Public consumption	Net indirect taxes
Transfer payments	Direct taxes by firms
Savings by government	Direct taxes by households
Total current expenditure and savings of government	Total current revenues of government

It may be noted that the government savings need not necessarily be positive. The government may spend more than its revenue in any particular period. In other words, the government may run a deficit on its current account. In such a situation, the government savings will be negative. Then, negative savings should be shown as a subtraction from the other debit items in its account. Alternatively, they can be shown as borrowing on the credit side. This will help the two sides to balance.

CAPITAL ACCOUNT

The capital account is not meant for any one sector. It covers the entire economy. Its purpose is to bring together in a simple and convenient manner the two aspects of the way that an economy adds to its wealth. On the one side of the account, it shows the assets acquired by the economy, namely, gross domestic capital formation and the net investment from abroad. On the other side, it shows the sources of savings out of which investment is made, namely, savings by households, firms and the government. Let us recall that this is nothing but the savings and investment account, we have discussed earlier. According to the rules, savings should be shown on the credit side of the capital account since they are shown as debits in the respective sector accounts. All types of investment should be shown on the debit side of this account. (We remember that investment is shown as a credit item in the accounts of the concerned sectors.)

CAPITAL ACCOUNT

Debits	Credits
Gross domestic capital formation (Private gross fixed investment + Public gross fixed investment)	Savings by households
Net investment overseas (exports − imports)	Savings by government
	Savings by firms
Total Investment	Total savings

So far, we have not come across all the three items on the debit side and the item relating to savings by firms on the credit side. But, we are already familiar with these concepts. These will come up in the production account and rest of the world account.

EXPORTS AND IMPORTS

Before we prepare the production account and rest of the world account, we have to know the rules to be followed in regard to exports and imports. We know that exports are a part of the National Product. We have already seen that production is entered on the credit side and consumption on the debit side of the account concerned. Since exports are also a part of production, they should be entered on the credit side of the producing sector. On the debit side of the producing sector account, the value of exports is shown as payments to the factors of production. Exports in the producing sector account will be entered as follows:

PRODUCING SECTOR ACCOUNT

Debits	Credits
Payment to factors of production	Exports

Let us suppose that a country exports goods and services worth Rs. 100/- to other countries and the value of the exports is paid as a factor income. In that case, the credit and debit sides of the above account will be equal. This shows only the internal balance of the account. As per our rules, every credit item should be shown as a debit item in some other account and vice versa. Here, the external balance is absent. It is essential to have an external balance for which we have to set up another account, namely, the rest of the world account. In this account, exports will be shown as a debit item. But the problem is how to show factor incomes as a credit item ? Let us recall that the exports of a country are its foreign investment. The incomes earned by the domestic factors of production in producing exports are nothing but foreign investment for the country. These incomes can take the shape of some financial assets like stocks, shares, or even gold. These are claims on future goods and services on the importing country. As per our accounting rules, investment is entered as a credit item in the concerned country's account. As such, foreign investment (value of exports) is entered as a credit item in the rest of the world account of the country.

Now we have achieved both an internal and an external balance for exports.

REST OF THE WORLD ACCOUNT

Debits		Credits	
Exports	Rs. 100	Foreign investment	Rs. 100
TOTAL	Rs. 100	TOTAL	Rs. 100

Let us suppose that the same country imports goods and services worth Rs. 50/-. How shall we proceed about them? On the face of it, one may say that we have to go in the reverse direction in making necessary entries in the producing sector and the rest of the world accounts. We have to go cautiously. Let us further suppose that these imports were undertaken by the producing sector and used by it for investment purposes. Let us trace the changes in the accounts. Since exports are a credit item in the producing sector account, imports may have to be shown as debit items. Now, there may be a theoretical objection in the sense that the debit side of the producing sector account shows only the incomes distributed to the domestic factors of production and the other domestic costs and the value of imports goes as income to the factors of production in foreign countries. Therefore, imports can be shown on the credit side of the account with a *negative sign*, or, one single item can be shown as *exports minus imports*. In the rest of the world account, imports should be shown on the credit side, and the equivalent value for imports should be shown on the debit side as foreign investment. But, to make the account neat, we shall make the entries as follows:

REST OF THE WORLD ACCOUNT

Debits		Credits	
Exports *minus* imports	Rs. 50	Foreign investment *minus* foreign disinvestment	Rs. 50
TOTAL	Rs. 50	TOTAL	Rs. 50

We know, imports are a disinvestment. Therefore, they have to be deducted from the exports to get the net foreign investment.

But, there is another account which is affected by these transactions. It is the capital account of the country. There, the net investment abroad will be shown as a debit item, and the value of this item will be shown on the credit side as savings by the producing sector (i.e., firms).

A somewhat confusing thing about the rest of the world account is that on both sides of the account, the same entries are made. But, it is very important to note that the two sides emphasise different aspects of the amount shown in the account. We have already seen that an excess of exports over imports is one way by which a particular country may add to its stock of wealth, namely, by carrying out the net investment overseas. It means that the rest of the world is able to buy more from the given country than it sells (i.e. importing more and exporting less and as a consequence run an import surplus). Therefore, if the rest of the world account shows an excess of exports over imports on the debit side of the concerned country, it means that the other countries have a deficit on foreign trade. At the same time, the account must show, on the credit side the borrowings from the concerned country by other countries corresponding to their deficit. In other words, the rest of the world account will show on the credit side the net investment overseas by the concerned country. As we have already seen, this credit item will appear as a debit item in the capital account of the given country. This debit entry refers to the actual trade taking place and hence is shown as a credit item in the producing sector account. We can summarize the rest of the world account as follows :

REST OF THE WORLD ACCOUNT

Debits	Credits
Exports *less* Imports (X – M)	Net overseas investment (X – M)

PRODUCTION ACCOUNT

This account is prepared for the entire economy. It can also be called as the Gross National Product and Expenditure Account. This account shows the value what the nation produces and what are the claims on this product. We have already understood that the value of what the nation produces at market prices, can be obtained by adding the following items :

> Private consumption; public consumption; gross domestic capital formation and exports *minus* imports.

The total value of these items is the GNP at market prices. But, the GNP at market prices is also related to the National Income in the following manner :

> The GNP at market prices – depreciation – net indirect taxes = National Income (NNP at factor cost)

In the production account, these two aspects of the composition of the GNP (GNI) at market prices are entered. On the debit side, we shall enter the various components of the GNI and on the credit side of the account are listed what the economy finally produced. The internal and external balance of the account can easily be checked up.

PRODUCTION ACCOUNT

Debits	Credits
1. National Income, Wages, Rent, Interest, Distributed profits, Undistributed profits, Direct taxes paid by firms	1. Private consumption
2. Depreciation	2. Public consumption (government consumption)
3. Net indirect taxes (i.e. less of subsidies)	3. Gross domestic capital formation
	4. Exports 5. *minus* Imports (X – M)
Gross National Income (product) at market prices	Expenditure on Gross National Product at market prices.

Exercises

1. An economy has the following set of accounts. Fill in the missing items (marked x). Both the names of the items and the figures should be appropriately entered.

PRODUCTION ACCOUNT

Debits		Credits	
Household income	200	Private consumption	120
Direct taxes on firms	25	Public consumption	40
Firms savings	15	Gross domestic capital formation	20
		Exports	80
		less Imports	20
TOTAL GNP	240	TOTAL	240

HOUSEHOLD ACCOUNT

Debits		Credits	
Household savings	60	Household income	X
Direct taxes on households	40	Government-transfer payment	X
TOTAL	X	Total personal income	X

CAPITAL ACCOUNT

Debits		Credits	
Net investment overseas	X	Firms savings	X
		Government savings	X
TOTAL	X	TOTAL	X

GOVERNMENT ACCOUNT

Debits		Credits	
	X		X
	X		X
	X		
TOTAL	X	TOTAL	X

REST OF THE WORLD ACCOUNT

Debits		Credits	
	X		X
	X		
TOTAL	X	TOTAL	X

2. In which accounts will you include the following and under what headings ?

   (a) Government transfer payments;
   (b) Indirect taxes;
   (c) Gross domestic capital formation;
   (d) Private consumption;
   (e) Exports.

3. Mention the items that are to be included in the household sector account.
4. Why is the rest of the world account difficult to understand ?
5. Where would you include the following items ?

   (a) Government savings;
   (b) Direct taxes paid by firms;
   (c) Public consumption expenditure;
   (d) Savings of households;
   (e) Imports.

6. What do you understand by the internal and the external balance of an account? Illustrate with examples.
7. Suppose, the debit side of the household sector account is more than the credit side. What does it mean ? How will you bring about an internal balance ?
8. What are the items that are included in the capital account of a country ?
9. Is it necessary for the government to have positive savings ? How will you balance the government account when the government runs on a deficit ?
10. Where will you include depreciation ?

CHAPTER 8

National Income in India

A. NATIONAL INCOME

The National Income is generally believed to be the most important single index of the overall economic situation of a country and as such commands a great deal of public interest. National Income statistics provide a wide view of the country's entire economy, as well as of the various groups in the population who participate as producers and income receivers and if available over a substantial period, they reveal clearly the basic changes in the country's economy in the past and suggest, if not fully reveal, trends for the future. Most of the developed countries of the world have information on the growth of the National Income in the past, but, unfortunately, we do not have past information on the National Income for India, in any reliable form. Therefore, comparisons of per capita income of some past year, say 1875 with the current year say 1976 is not possible. Data regarding the National Income are very scarce and are of very poor quality for the period 1850-1900. The position is somewhat better in respect of the more recent decades, that is from 1900 to date and a fairly large number of estimates of very uneven quality are available for that period.

The estimates of National Income are prepared by every country, because with the data available for a number of years, they reveal the trend of the National Income in the country. Normally the data of the National Income are computed or estimated by :

(i) The Net National Expenditure Method,
(ii) The Net National Income Method,
(iii) The Net National Product Method and
(iv) The Commodity Flow Method.

One can say that theoretically all the above methods should give almost the same figure of the National Income but due to non-availability of data and their reliability differences are noticed in the totals of the National Income computed with the help of these methods.

There are various concepts related to the National Income, namely, the Gross National Product (GNP), the Net National Product (NNP), National Income, the Personal Income and the Disposal Income. We have already studied these concepts in detail and their interrelationships in Chapter V. There, we have also noticed the difference between the GNP and the NNP at factor cost and the GNP and the NNP at market price. In this Chapter, we will study in detail the methodology used for estimating the National Income and other related concepts in India.

In India, we estimate the National Income by both the current and constant prices. When we estimate the value of the total production on the basis of current prices (market price of that year), then it is termed as the National Income at current prices. Such estimates provide information on the state of economic affairs of that year. These estimates, however, are not very useful for making comparisons of changes in real income over a number of years. It is because prices might have changed in the intervening periods, distorting the value of changes in production. To estimate real changes in production over a number of years, the National Income of various years is estimated, at the market prices of a fixed year called the constant prices.

We shall now discuss the size and composition of National Income before independence and after independence in India.

Pre-Independence Estimates

Before independence, there was no government agency to compute the National Accounts statistics and hence, no estimates were prepared at the government level. All the estimates which are available, had been prepared at the individual level. In India, attempts were made by various persons since 1876 to estimate the National Income and the per capita income. The first attempt was made by Dadabhai Naoroji in 1876 to estimate the National Income and the per capita income for the year 1867-68. A number of efforts were made to estimate the National Income and per capita income. Table 8.1 summarises the subsequent estimates.

A perusal of the estimates given in the table reveals that the data regarding the National Income and the per capita income for different time periods—which are not too distant sometimes for the same period—have wide variations. These divergences are largely due to the conceptual and statistical deficiencies from which these estimates suffered in various degrees and also due to the bias and personal prejudices of the various estimators according to their position in political life.

The nationalist minded economists wanted to show poverty and the low standard of living prevailing at that time in India with the help of the National Income statistics, whereas the pro-government persons made some efforts to point out that the per capita income was really not so low. Therefore, due to the presence of the political bias, these estimates cannot be used to study the long term trends in the economic

TABLE : 8.1

PAST ESTIMATES OF NATIONAL INCOME AND PER CAPITA INCOME OF INDIA

Author	*Estimates of the year*	*National Income (in crores of Rs.)*	*Per Capita Income (in Rs.)*	*Coverage*
Dadabhai Naoroji	1868	340	20	British India
F. J. Atkinson	1875	574	31	British India
Baring & Barbour	1882	525	27	British India
Lord Curzon	1897-98	675	30	British India
William Digby	1899	390	17	British India
Sir B. N. Sharma	1911	—	50	British India
Findlay Shirras	1911	1942	80	British India
Wadia & Joshi	1913-14	1087	44	Whole of India
Arnold Lupton	1919-20	2854	114	British India
Shah & Khambata	1921-22	2364	74	Whole of India
V. K. R. V. Rao	1931-32	1689	62	British India
B. Natrajan	1938-39	1482	67	British India
Eastern Economist	1939-40	1934	67	British India
Ministry of Commerce (Govt. of India)	1945-46	6234	198	British India

growth of India. Besides, the political bias, the National Income estimates were based on crude unreliable and incomplete statistical data. Secondly, they did not conform to the accepted concepts and definitions; for example, while Baring Barbour's estimate of the per capita income was high compared to Dadabhai Naoroji's estimate, it was mainly because Baring attempted to cover services whereas Naoroji left them out. Thirdly, the geographical areas were also one of the main causes of the divergences in the estimates of the National Income. Fourthly, the estimates were in current prices and limited for a year and hence could not be used for measuring long term trends in output. Fifthly, the methodology used for calculating the incomes of various sectors was not uniform and was often based on hunches and guesses. For example, Baring assumed the non-agricultural income to be one half of agricultural income; similarly, other estimators also made such crude assumptions which have no relevance in theory.

The estimates prepared by various researchers during 1900-1947 were of a somewhat better quality. The first scientific calculation was undertaken by Dr. V.K.R.V. Rao. Dr. Rao's estimate could be regarded as best, inspite of weak statistical foundations, as the political element was noticeably absent in his estimates. He divided the Indian economy into two categories. In category one, he included industry, trade, transport, public services, administration, the professions, liberal art and the domestic services and in the other category, the important areas were agriculture, pastures, mines, forests, fishing and hunting. For the second category, Dr. Rao used the output method and for the first, he used the income method.

Despite all these limitations, these estimates are good enough to indicate the long term trends in output and the per capita income. Taken together, these estimates show that the level of the per capita income was very low.

Post-Independence Estimates

After independence, the Government of India was also interested in giving due weightage to the studies of National Income estimates and started preparing estimates on an official basis. Realising the need to have more reliable estimates of the National Income for policy decisions, the Government of India appointed the The National Income Committee on 4th August, 1949, with Prof. P.C. Mahalanobis as Chairman and Prof. D.R. Gadgil and V.K.R.V. Rao as members of the Committee. The terms of reference of the committee were to prepare a report on the National Income and related estimates to suggest measures for improving the quality of the available data and for the collection of further essential statistics and to recommend ways and means of promoting research in the field of National Income. The committee was also expected to guide the National Income unit of the Government of India to complete authoritative estimates of the National Income.

The committee brought out its first report in the year 1951 and the other final report in 1954. In these reports detailed methods of the estimation of the National Income and source material to be used for the preparation of such estimates are discussed in detail together with the limitations of the statistical data used and the gaps in the information. After the release of these reports, the official series of National Income estimates have been regularly prepared and published by the Central Statistical Organisation in their publication — National Accounts Statistics. Primarily, the Central Statistical Organisation had taken over the work of preparing annual estimates of the National Income mainly following the methods adopted and recommended in the two reports of the National Income Committee. In the process, the Central Statistical Organisation has expanded and strengthened the statistical system to collect some new information and to make certain improvements in the quality of primary data, which is required for the estimation of the National Income statistics.

To fulfil the primary object of the formation of the National Income Committee, the Central Statistical Organisation reviewed the methods adopted for preparing the conventional series of National Income in the light of the new data, which became available in the mean time, and brought out proposals for a revised series of National Income, which had been published in 1961 in a monograph—"National Income Statistics—Proposals for a Revised Series of National Income Estimates for 1955-56 to 1959-60". These proposals were not implemented, but they served a useful purpose in so far as a discussion of these attracted quite a few good comments and suggestions.

To review the different estimates made by the different government and non-government agencies, a brief account in the tabular form is given as under :

TABLE : 8.2

ESTIMATES OF NATIONAL INCOME AND PER CAPITA INCOME OF INDIA

Author	*Title of Source*	*Coverage*	*Estimates of the year*	*National Income (in crores of Rs)*	*Per Capita Income (in Rs.)*	
					Current Prices	*1948-49 Prices*
	Commerce Annual Review No. 1948	Indian Union	1947-48	4974	213	263
	Ministry of Commerce	Union Province	1948-49	7059	277	277
	First Report of National Income Committee, 1951	Indian Union	1948-49	8710	255	255
	Final Report of National Income Committee, 1954	Indian Union	1948-49	8650	247	247
	Final Report of National Income Committee, 1954	Indian Union	1949-50	9010	254	249
Natrajan B.	"An Essay on National Income & Expenditure in India, 1949"	Union Province	1949-50	5658	229	221
	Final Report of National Income Committee, 1954	Indian Union	1950-51	9530	265	264
Central Statistical Organisation.	Conventional Estimates of National Income	Indian Union	1951-52 (onwards)	Published regularly and similarly in white paper		
- do -	Revised Estimates of National Income	Indian Union	1960-61 (onwards)	- do -		

In our country, we take the basis of measurement of the National Income as the financial year, that is from 1st April to 31st March, because in this type of selection of the year, almost all the seasons are included.

It is evident from the above table that many efforts mainly concentrated on the collection of the National Income data were made by different government agencies so as to frame a systematic procedure and methodology to obtain the data from different sources by adopting different methods for the computation of the National Income estimates. There had been substantial differences in the estimates even by the same National Income Committee for the same year, because in their first report, the Committee estimated the National Income as 8710 crores, while for the same period in the final report of the National Income Committee, the figures were changed to 8650 crores, and again a year after i.e., for 1950-51 the National Income Committee estimated it as Rs. 9530 crores. However, it is evident from the above studies and their detailed account does not mean that the National Income increased due to betterment of the country's economic conditions but may be due to improvements in the methodology of data collection.

The National Income Committee Report is a landmark in the history of National Income statistics. It gives us a comprehensive picture of the National Income for the whole of India. The important features of the National Income Committee Report are as under:

(a) During 1950-51, agriculture contributed nearly half of the National Income. The term agriculture include agriculture proper, animal husbandry and ancillary activities as also forestry and fisheries.

(b) Mining, manufacturing and hand trades contributed about one-six of the total income.

(c) Commerce, transport and communications accounted for a little more than one-sixth of the total income.

(d) Other services such as professions and liberal arts, the administrative services, the domestic services and house property accounted for about 15 per cent of the National Income.

(e) The share of commodity production was about two-thirds of the National Income. The term commodity production includes material production derived from agriculture, mining, factory establishment, hand trades, etc.

(f) Services accounted for about one-third of total income. The services sector includes commerce, transport and communications, the administrative services, liberal arts, the domestic services, etc.

(g) Productivity per person engaged in different occupations was computed as follows:

TABLE 8.3

TABLE SHOWING THE PRODUCTIVITY PER PERSON ENGAGED IN DIFFERENT OCCUPATIONS IN INDIA DURING 1950-51

Sector	*Percentage of working force employed*	*Percentage of net national product produced*	*Productivity per person (In Rs.)*
(i) Agriculture	72.4	51.3	500
(ii) Mining, Manufacturing and Hand Trades	10.6	16.1	1000
(iii) Commerce, Transport and Communications	7.7	17.7	1500
(iv) Other Services	9.3	15.1	800

We can also establish the correlation between the number of persons employed in different occupations and their contribution to the Net National Product. It is apparent that agriculture appears to be the least productive occupation in which 72.4 per cent of the total working force is employed but it produces only 51.3 per cent of the Net National Product. The average productivity per person engaged in agriculture was Rs 500/- only. On the contrary in industry (mining) manufacturing and hand trades, the average productivity per engaged person was Rs 1,000/- (twice the average productivity per engaged person in agriculture). Similarly, in commerce, transport and communication, the average productivity per engaged person was Rs 1,500/- (three times the average productivity in agriculture). In the services, the average productivity was Rs 800/- per engaged person. A further break-up revealed that the average productivity in mining and factory establishments was the highest, i.e., Rs 1,700/- per engaged person.

(h) The share of the government sector in the net domestic product was 7.6 per cent as compared to that of the private sector which was 92.4 percent in 1950-51. The National Income Committee also revealed that the share of the government in national expenditure was 8.2 percent.

It has been mentioned above that subsequent to the release of these reports, the official series of the National Income Estimates have been regularly prepared and published by the Central Statistical Organisation in their annual publication *Estimates of National Income* (It is now known as the *National Accounts Statistics*). It is commonly known as the *White Paper on National Accounts*. It is well known that the National Income can be estimated, depending largely upon the availability of the data by these approaches, viz:

(i) The aggregate value of all goods and services produced by the country after deducting all material costs incurred in the process of production.

(ii) The aggregate of earnings of all people, on account of labour and of ownership of property from the current production of goods and services by the country's economy.

(iii) The aggregate of the final expenditure by all people in the form of current consumption and addition to wealth.

The above three methods follow the production, income and expenditure approaches in the process of computation of statistical data for the estimation of the National Income of the country.

The National Income Committee estimated the National Income for each of the years from 1948-49 to 1950-51 both at current and constant prices (1948-49). The estimation of National Income has then been taken over by the Central Statistical Organisation. In its initial stages the CSO (Central Statistical Organisation) has largely followed the recommendations of the National Income Committee. Till 1967 the National Income Estimates were prepared largely on the basis of the methods and procedures employed by the National Income Committee. These series of estimates called Conventional Series Estimates, were both in terms of current and constant (1948-49) prices. In August, 1967, the Central Statistical Organisation made certain significant changes in the procedure of estimating the National Income and published them as the "Broucher on Revised Series of National Product for 1960-61 to 1964-65". It gives the estimates of National Income for 1960-61 to 1964-65 at current and constant (1960-61) prices. The Revised Series are a distinct improvement over the conventional series as considerable new data which have become available are used in the estimation of National Income statistics.

Conventional Series

As has been said earlier, for conventional series estimates, same methodology was adopted by the Central Statistical Organisation which was used and recommended by the National Income Committee. In this methodology, the economic activities of the economy were divided in 13 main sectors on the basis of the 1941 and 1951 census. These sectors were as follows:

1. Agriculture and Animal Husbandry;
2. Forestry;
3. Fishery;
4. Mining;
5. Factory Establishments;
6. Small Enterprises;
7. Communications;
8. Organised Banking and Insurance;
9. Other Commerce and Transport;
10. Profession and Liberal Arts and Domestic Services;
11. Public Authorities;
12. House Property; and
13. The Balance of Payments and the Net-income from Abroad.

In the absence of reliable data regarding the production, income and expenditure, the National Income Committee thought it better to use multiple methods for the computation of the National Income Statistics. Therefore, basically the net output method and income method were given due importance and these were broadly used. In the above categorisation of sectors, 82 per cent of the total working force was employed in the first five categories; therefore, the production method or the net output method was exclusively used; and in the remaining sectors the income method was used. After having added these income estimates of all the sectors, the Net Domestic Product was obtained. Then the net income from abroad was further included so as to finally compute the Net National Product at factor cost. Thus, in the Conventional Series, the estimates of the net product from the agriculture, animal husbandry, forestry, fishery, mining and factory establishment sectors was estimated by following the product approach which comprises of estimating the gross value of output and deducting from it the value of various raw materials, service inputs and depreciation of assets used up in the process of production, whereas, for the other sectors viz. small enterprises, other commerce and transport, the profession and the liberal arts and domestic services, house property, the income approach was adopted which consisted of multiplying the average net earnings per person by the total estimated number of persons engaged in the respective sector. While estimating the average net earnings per person, all factor incomes were taken into account. The use of Budget documents of the Central and State Governments, the Profits and Loss Accounts of Insurance and Banking Companies etc, were taken into consideration for the estimates of the National Income in respect of the Banking and Insurance sector as well of the Public Authorities.

The collection of data of the National Income were later on taken over by the Central Statistical Organisation and the CSO also used the same method of net output and income approaches as used by the National Income Committee. The publication of the Conventional Series estimates were abandoned since 1970.

Revised Series

In view of the growing importance of the National Income estimates for the purposes of planning, several methodological studies were undertaken by the National Income Unit. The Central Statistical Organisation after taking into account the comments and suggestions of various scholars and agencies engaged in this field and a number of additional independent studies based on the latest available data with the government and non-government agencies helped in bringing out its other publications. These publications describe the revised and conventional methodologies along with the different estimates of the industries of the economy. The revised series provide the National Income data at current prices and at 1960-61 prices for the period 1960-61 and onwards.

Like the conventional series, the revised estimates of the National Product were categorised under the following heads with the estimation of the working force from individual industries. This occupational classification was based on the 1961 population census. In 1973, some minor changes were made and after that the occupational classification is as follows :

Primary Sector

1. Agriculture;
2. Forestry and Logging;
3. Fishing;
4. Mining and Quarrying.

Secondary Sector

5. Manufacturing—
    (a) Registered;
    (b) Unregistered.
6. Construction;
7. Electricity, Gas and Water Supply.

Tertiary Sector

8. Transport, Storage and Communication—
    (a) Railways;
    (b) Transport by other means and Storage;
    (c) Communication.
9. Trade, Hotels and Restaurants;
10. Banking and Insurance;
11. Real Estate, Ownership of Dwellings and Business Services;
12. Public Administration and Defence;
13. Other Services;
14. External Transactions.

In the revised series, the first four items are identical to the conventional series. The fifth and sixth items of the conventional series relating to the processing sectors are categorised into two parts of the fifth sector (viz., Manufacturing—(a) registered or (b) unregistered) and seventh item of the revised series. Item No. 7 and 9 of old series are categorised under item No. 8 of the revised series. Similarly minor changes have been made in other sectors to frame the revised series.

With these large number of revisions in the different sectors of the economy, the revised series of the National Product are prepared at current prices and at the prices of 1960-61. Many revisions were largely the result of the availability of data from different government and non-government sources. Like the Conventional series, the product approach was employed in the commodity producing sectors e.g., agriculture, forestry, logging, fishing, mining and quarrying, large scale manufacturing; while for other sectors viz., small scale manufacturing, electricity, gas and water supply, transport and communications, trade storage, hotels and restaurants, real estate and ownership of dwellings the income method was used. For the construction industry, the estimates were prepared by using both the commodity flow and expenditure methods. In the other sectors, the estimates are based on the detailed analysis of the Central and State Government Budgets [as in the case of Public Administration and Defence] and on the basis of the profit and loss accounts of the Banking and Insurance companies, the relevant information of the Banking and Insurance sector could be gathered. The estimates of external transactions are based on the data as supplied by the Reserve Bank of India.

Improvements in the Revised Series

Certain improvements in the revised series were related to the modifications in the industrial classification for the measurement and presentation of the National Product estimates, by using the 1961 census data which could help in the presentation of separate estimates in respect of the organised and unorganised sectors of the economy and estimation of National Product in each sector. The main improvements in the revised industry-wise estimates, however related to:

(a) Agriculture where the all-India estimates are obtained by aggregating the state-wise estimates which are based on the fully revised estimates of turn out of agricultural commodities, the revised yield rates of minor crops, livestock products and agricultural by-products, a wider empirical base for data on prices and the use of the latest data on cost deductions;

(b) Large scale manufacturing, where the detailed data compiled by the Annual Survey of Industries together with the revised index of Industrial Production with 1960 as the base have been used;

(c) The unorganised sectors like small scale manufacturing, transport, (other than Railways), trade, hotels and restaurants and other services, wherein the working force estimates have been obtained from the current National Sample Survey data supplemented by the results of the other available surveys and studies and the 1961 census of population;

(d) Construction, where expenditure and commodity flow approaches (instead of income approach) have been used;

(e) Real estate and ownership of dwellings, where the estimates have been prepared on the basis of the number of residential houses reported in the 1961 census; and

(f) Public Administration and Defence, where the scope of this industry has been narrowed down to the extent practicable with a view to exclude all government activities other than administrative and regulatory activities.

The base year for compiling the constant price estimates in the revised series is 1960-61 in place of 1948-49 adopted for the conventional series. This is done specially because 1960-61 is the more recent bench work year for which maximum data are available.

The various economic activities covered under the various sectors in the revised series are given in Appendix—1. The income computation procedure (or the net value added of total output) adopted by the Central Statistical Organisation from various sectors is also given in Appendix—2. These two appendices reveal how different estimation procedures are adopted in various sectors of the Indian economy for calculating the National Income statistics. As has been mentioned earlier the whole economy has been divided into 13 sectors (excluding the foreign trade sector); in the first four and first part of the fifth sector the net output method, in the sixth sector commodity flow and expenditure method and in all the other remaining sectors income method is being used. From all these sectors, then, we get data regarding the value of the total output; by adding these figures of individual sectors we get the *net domestic product at factor cost* (because the value of *depreciation* has been already deducted while estimating the value added of the total output of each sector separately). Now, by adding the *net factor income from abroad* which is available from the balance of payments accounts, we get the *Net National Product at factor cost* or the *National Income.*

Now, we can understand the difference and inter-relationships between the various concepts of the National Income with the help of Indian data. A reference to Table No. 2 of Appendix—3, gives us estimates of the National Product and related aggregate for 1960-61 to 1974-75.

Let us consider any year, say, 1974-75 for estimating the various National Product aggregates.

Net Domestic Product at Factor Cost	Rs. 58,485 Crores
Add the net factor income from abroad	(−) Rs. 348 Crores
Net National Product at Factor Cost or the National Income	Rs. 58,137 Crores
Add indirected taxes *less* subsidies	(+) Rs. 6,558 Crores
Net National Product at Market Price	Rs. 64,695 Crores
Add depreciation (consumption of fixed capital)	(+) Rs. 3,414 Crores
Gross National Product at Market Prices	Rs. 62,109 Crores

Now we shall turn to the study of the growth of the net domestic product in India at factor cost and constant prices.

B. Net Domestic Product In India

The official estimates of the Net Domestic Product at factor cost by industry of origin at 1960-61 prices are given in the table 8.4 for the periods 1950-61 (the base year for the First Five Year Plan); 1955-56, 1960-61 and 1965-66 (the terminal years of the First, Second and the Third Five Year Plans); 1968-69 (the last year of the annual plan period and the base year for the Fourth Five Year Plan); 1973-74 (the terminal year of the Fourth Five Year Plan) and the 1975-76 (the latest year for which the NDP data are available).

From these statistics it is obvious that during this period the trend in the Net Domestic Product was towards a rise. The rate of rise was different for different years. In some years the rise in the NDP was rapid, and there were years when, instead of a rise, there was fall in the NDP (the figures for those years are not shown in the table; however, the years are 1957-58, 1965-66 and 1972-73) and the NDP remained at the same level in 1973-74 and 1974-75. It it clear that over the period 1950-51 to 1975-76, the NDP increased by 2.4 times, thus, showing an increase of about 3 percent per annum on an average.

In the First Five Year Plan (1950-51 to 1955-56), the NDP has increased beyond expectations. In this period, an increase of 19.1 per cent has been noticed in the NDP at factor cost, whereas the target was set for only 11 per cent. This rapid rate of increase in the NDP can be attributed to good harvests during the period. The manufacturing sector also noticed an increase of 27 per cent in the value of output. The contribution of all other sectors in the increased NDP was noteworthy. Here, we have to keep in mind that Indian Economy is primarily an agricultural economy and therefore, agricultural output forms a significant portion of the total output of the economy. So, every change in agricultural output will always have its impact on the NDP. It means that the NDP will be more affected by any change in agricultural output than changes in output of the other sectors of the economy. Hence, it can be concluded on the basis of the above

TABLE : 8.4

NET DOMESTIC PRODUCT AT FACTOR COST

(at 1960-61 prices)

(Rs. Crores)

S. No.	Industry 1	*1950-51* 2	*1955-56* 3	*1960-61* 4	*1965-66* 5	*1968-69* 6	*1973-74* 7	*1975-76* 8
1.	Agriculture	4936	5699	6580	6148	7070	8042	8712
2.	Forest & Logging	139	143	174	240	241	273	311
3.	Fishing	45	60	77	91	103	126	130
4.	Mining & Quarrying	76	95	134	188	198	226	270
5.	Manufacturing	1064	1400	1856	2557	2660	3403	3596
	(a) Registered	575	771	1071	1585	1580	2195	2279
	(b) Un-registered	489	629	785	972	1080	1208	1317
6.	Construction	410	467	625	865	1047	1010	1160
7.	Electricity, Gas and Water Supply	24	39	68	131	168	238	267
8.	Transport Storage and Communications	332	423	576	788	911	1053	1213
9.	Trade, Hotels & Restaurants	776	976	1294	1681	1855	2224	2392
10.	Banking & Insurance	77	117	160	223	258	365	394
11.	Real estate ownership of dwelling & business services	282	334	392	443	466	499	514
12.	Public Administration & Defence	332	386	538	823	969	1481	1672
13.	Other Services	629	728	861	1056	1166	1341	1414
14.	Net Domestic Product at Factor Cost	9122	10870	13335	15234	17112	20281	22045

discussion that the increase in NDP was mainly due to an increase in agricultural output though the manufacturing and service sectors also contributed towards it.

The Second Five Year Plan was an industrial plan. In this plan, (1951-56 to 1960-61) the increase in the Net Domestic Product was below expectation. Only 22.7 per cent increase in the net domestic products was noticed, whereas the target was set for 25 per cent during the second plan period. The reasons for this slow rate of growth in the net domestic product could be more emphasis on large scale industries which require heavy investments. In this period the manufacturing sector noticed an increase in output of 33.7 per cent, whereas the agricultural output was increased by only 16.1 per cent. Obviously, it decreased the share of agriculture in the net domestic product from 55.2 per cent to 52.2 per cent.

In Third Five Year Plan, a target of more than 5 per cent increase in the net domestic product was set, but, this target could not be achieved in this period (1960-61 to 1965-66). During this period, the NDP noticed an increase of about 14.2 per cent only. In the first four years of this plan, an overall increase of 20.1 per cent only was achieved but in the terminal year of the plan the NDP experienced a decline by 5.0 per cent. 1964-65 was a year in which agricultural output increased by 7.7 per cent due to good rains. But, in the year 1965-66, India experienced adverse climate and severe drought. The failure of crops also led to a fall in the production of those industries which depend mostly on agriculture for raw materials. Further, the conflict with China and Pakistan led to a heavy increase in expenditure on defence. As a consequence resources available for economic development were further reduced. So, in the Third Five Year Plan, the NDP increased at a rate of only 2.8 per cent per year. India also experienced in this period population growth at the rate of 2.5 per cent per year. Therefore, the per capita NDP more or less remained the same. In other words, the per capita income during the Third Plan did not change at all.

Due to unsatisfactory progress in the growth of the NDP during the Third Five Year Plan, the Fourth Five Year Plan which was scheduled to start in 1966-67 was postponed for three years, and for these three years (1966-67 to 1968-69), India had three Annual Plans. The year 1966-67 was found to be adverse for agricultural production because in this year the economy faced another drought. The food production remained more or less at the same level. The contribution of the manufacturing and service sectors to the NDP also remained at the same level. So, the growth of the NDP during this year (1966-67) was found to be less than one per cent. The process of recovery set during 1967-68 and continued during 1968-69. The increase in the NDP was mainly due to a good harvest. A new agricultural strategy was adopted in this period in the form of new and improved techniques, new variety of seeds etc. Considering the period of the Annual Plans (1966-67 to 1968-69) as a whole, a growth of 12.3 per cent was noticed.

For the Fourth Plan (1969-70 to 1973-74), the target was set for attaining a 5.5 per cent growth in the National Income per year. But, similar to the Third Plan the progress of this plan was also very unsatisfactory. The growth in the net domestic product was observed to be 18.5 per cent during this period which comes to about 3.7 per cent per annum. During the first year of the Fourth Five Year Plan, the NDP increased by 6.4 per cent which was more than the target. In the second year (1970-71) the NDP increased by 5.4 per cent, but in 1971-72, the increase was only 1.1 per cent. During 1971-72 to 1972-73, it fell by 1.3 per cent and an increase of 5.4 per cent was noticed in the last year of the plan. The slow progress in the growth of the NDP in this plan was mainly due to the sudden fall in the agricultural output which in turn adversely affected the industrial output. The other important factor was the Indo-Pakistan war.

In the first year of Fifth Year Plan, a position of stagnation has been noticed; there was no change in the NDP which remained at the same level. But, in the second year of the Fifth Plan, the NDP increased by 8.7 per cent. This increase in the NDP was mainly due to the increase in the manufacturing and agriculture output.

The experience of the development of other countries shows that with development, the proportional contribution of agriculture falls and that of the modern sector increases. Here, the modern sector means that sector where capital, power and improved new technology are used. In the Indian context, the manufacturing industries, transport communications etc. can be included in the modern sector. In India, the contribution of the agricultural sector to the NDP is falling but, there seems to be no marked increase in the contribution of the modern sector. Following is the table which gives the percentage distribution of the NDP at factor cost by the industry of origin at 1960-61 prices.

TABLE 8.5

NET DOMESTIC PRODUCT BY INDUSTRY OF ORIGIN AT 1960-61 PRICES

(Percentage Distribution)

Years	*Primary Agriculture, Forestry, Logging, Fishing, Mining and Quarrying*	*Secondary Manufacturing, Construction Electricity, Gas & Water supply*	*Tertiary (All other industries)*
1950-51	57.0	16.4	26.6
1955-56	55.2	17.5	27.3
1960-61	52.2	19.1	28.7
1965-66	43.8	23.3	32.9
1968-69	44.5	22.6	32.7
1973-74	42.7	22.9	34.4
1975-76	42.7	22.8	34.5

In the sector-wise analysis, we find that the share of agriculture in the NDP declined from 57.0 per cent in 1950-51 to 42.7 per cent in 1975-76, which means that this sector still contributes the largest amount to the country's NDP. This is a clear indication of the fact that the Indian economy is predominantly an agricultural one. During the period under review (1950-51 to 1975-76), in absolute terms, the share of agriculture rose sharply from Rs. 5,196.00 Crores, to Rs. 9,423.00 Crores. During the period 1950-51 to 1975-76, the income originating from agriculture increased by 81 per cent.

The share of the manufacturing sector (secondary sector) is very small; but, showed a steady increase from 16.4 per cent to 22.8 per cent over the period under consideration. This brings out the fact that the industrial sector of the economy is still under-developed, which is one of the main characteristics of an under-developed economy. In absolute figures, it has shown a manifold increase. (more than 3 times). The income originating in this sector, which was Rs. 1,498 Crores in 1950-51, shot up to Rs. 5,023 Crores in 1975-76. This, further means that the share of the commodity sector (agriculture and manufacturing) has declined from 73.4 per cent to 64.6 per cent.

The proportion of income from the tertiary sector, which consists of transport, communications, trade, finance, real estate and community and personal service, also shows an upward trend. It has increased from 26.6 per cent in 1950-51 to 34.5 per cent in 1975-76; like the other sectors, the contribution of this sector in absolute terms also shows a rapid increase. This comes to about 21.3 per cent. This increase is mainly due to the better performance of the transport, communications and trade sub-sectors.

C. AN UNDERSTANDING OF THE WHITE PAPER ON NATIONAL INCOME

The Central Statistical Organisation, Department of Statistics, Ministry of Planning, Government of India, publishes a broucher entitled the *National Accounts Statistics*. It is also known as the White Paper. This publication deals with the country's National Accounts. Apart from presenting the estimates of the National Product, it also gives details of consumption, savings and capital formation and transactions of the public sector. The latest *White Paper* in the series of annual publications on the National Income covers the period 1960-61 to 1974-75 and has been published in October, 1976. In this issue, the existing National Accounts estimates for the earlier periods have been revised and brought upto date and also, for the first time the CSO has published estimates of capital formation by industry and distribution of factor incomes by broad sectors. These accounts, broadly speaking, conform to the "United Nations System of National Accounts", which have four different facets—Standard National Income Accounts, Flow of Funds Accounts, Input-Output Tables and the National Balance Sheet. In India, Standard National Income Accounts are being prepared and published by the CSO, the flow of funds accounts by the Reserve Bank of India and the other two accounts input-output and National balance sheet are yet to be covered. In the following pages, we will try to understand the various tables of the current issue of the White Paper, published by the CSO in October, 1976. The important tables are being given in Appendix-3.

Table 1

The Table No. 1 presents the information on various important economic indicators of the Indian economy, viz., the Net National Product, population, per capita income, consumption, savings and capital formation. This gives us a bird's eye view of all the parameters since 1960-61 to 1974-75. This table gives the level of the National Income and the per capita income for different years at current and constant prices. The Net National Product at factor cost (that is, the National Income) at current prices shows 338 per cent increase over the period under consideration (1960-61 to 1974-75), but, if we consider the increase in the National Income at constant (1960-61) prices, we notice an increase of only 52 per cent. This difference in the growth of the National Income is due to the continuous and rapid increase in prices during this period. Thus, we notice the importance of estimating the National Income statistics at constant prices, because due to changes in prices the estimates at current prices do not reflect a rise and fall in real output. Similarly, in the per capita income statistics, we find that at current prices the per capita income has doubled over the time period under consideration, but, at constant prices it reveals an increase of 12.3 per cent only. Similarly, the inferences can be drawn from this table for the inter plan periods also for the National Income and the per capita income. During the third plan period, the average annual growth rate of the National Income at constant prices was 2.7 per cent and that of the per capita income was only 0.4 per cent (this can be further explained with the help of this table that the Indian population increased during this period at the rate of about 2.5 per cent); the growth rate of the National Income during the Annual Plan Period was 4.2 per cent and that of the per capita income was 2.0 per cent and during the fourth plan period, the average annual growth rate of the National Income was 3.5 per cent and that of the per capita income by 1.5 per cent only.

This table reveals the information on the net domestic savings, the net domestic capital formation at current and constant (1960-61) prices and also on the rate of saving and rate of capital formation (both in per-centage form). It is evident from the figures that the amount of savings and capital formation is continuously increasings. In 1960-61, the rate of savings was 9.3 per cent (of the NDP) which increased to 13.1 per cent in 1974-75, but, in between, there were certain periods in which the rate of savings decreased (viz. 1967-69, 1968-69, 1971-72, 1973-74 etc.). A similar trend can be found in the rate of capital formation. During 1960-61 to 1974-75, trends in the rate of capital formation show wide fluctuations; in 1960-61, it was 12.7 per cent and in 1974-75 it increased to 14.7 per cent. The periods of low rate of capital formation are generally associated with low inducement to invest on the part of entrepreneurs and periods of high rate of capital formation are associated with a high rate of investment (both public and private).

We can also have some information from this table regarding the private final consumption expenditure and the per capita final consumption expenditure at both current and constant prices. These concepts are of great significance as they indicate the level of the standard of living and the economic welfare of the people. The per capita final consumption expenditure at current prices has increased throughout the period under consideration, whereas at constant prices, it shows small fluctuations over the period 1960-61 to 1974-75, and has increased only by 9 per cent. But, it is clear from the table that the per capita consumption expenditure is very low in the country. It is about Rs. 25/- per month, which is extremely low for a human being. It can not even provide the basic necessities of life—food, clothing and shelter—not to talk about health care, entertainment etc. One can easily imagine the level of poverty of Indian people.

For measuring the changes overtime, we can take the help of index numbers which are also given in this table for each item viz., the Net National Product at factor cost, the net domestic savings, the net domestic capital formation, etc. For example, if we want to know the change in the NNP at factor cost at constant prices from 1960-61 to 1968-69, then, not the index number of NNP for 1968-69 by which we can find the percentage change. The index number of the NNP in 1968-69 according to the table is 127.7 which means that the NNP has increased by 27.7 per cent during the period under consideration.

Table 2

This table is very important from the point of view of understanding the difference and interrelationship between the various concepts of the National Product and other related aggregates. In section *A Revised Trends* we have seen how we can get various aggregates with the help of this table.

From this table, we notice that the NDP at factor cost and the NDP at market prices are steadily increasing. But, we notice from these statistics that the NDP at factor cost formed 93 per cent of the NDP at market prices in 1960-61, but. has gone down to 91 per cent for the years 1970—71 and also for 1973-74; and has further gone down to 90 per cent for the year 1974-75, which means that the revenues in the form of indirect taxes are growing at a faster rate than the domestic product (As NDP at factor cost=NDP at market price *minus* indirect taxes *less* subsidies).

Similarly, from this table, it can be inferred that the income of the public sector has been growing comparatively faster than the total income because the private income as a per cent of the NNP at market prices is falling. If we calculate the personal disposable income as a per cent of the personal income with the help of this table, we observe no significant change in it, which suggests that there has been no appreciable change in the tax burden of the household at the national level.

Table 3 & 4

Table 3 and 4 shows the NDP at factor cost by the industry of origin at current and constant prices respectively. These tables are helpful in understanding the importance of various sectors in the economy. For inter-temporal comparisons the table on the NDP at factor cost at constant prices should be considered. From these tables, it can be observed that the agricultural sector (or the primary sector) still occupies the first place followed by the tertiary (or the services sector) and the secondary (or the manufacturing) sector. However, it is interesting to note that the share of the primary sector showed a downward trend whereas the other two sectors have increased their respective shares. More detailed discussion of this type with the help of this table has been done in section *B*.

Table 5 & 6

The Gross Domestic Product at factor cost by the industry of origin at curren t prices is given in table 5 and at constant prices in table 6. The statistics regarding the GDP are mainly used for discussing the economic growth of the economy. It gives us a picture of the total output in the economy. As these tables give the data on the GDP by the industry of origin they can also be used for showing the ralative importance of various sectors of the Indian economy.

Table 7

Table 7 gives information about factor incomes in the NDP by broad sectors for 1960-61 to 1974-75. Theoretically, there are only four categories of factor incomes which go to make up the net value added, namely, compensation to employees (wages and salaries), interest, rent and profits and dividends. However, in this table, we have the fifth category also, namely 'mixed income of the self employed'. In the case of the unorganised class of self employed persons, it is very difficult, rather impossible, to separate labour income from operating surplus (profit) and therefore, this fifth category was involved. In the organised sector, it is possible to classify all incomes into the first four classes, whereas in the unorganised sector there are no profits and dividents incomes separately. The following table (8.6) has been compiled which shows the per cent distribution of factor incomes.

For the *economy as a whole* the distribution has remained fairly stable over the period (1960-61 to 1974-75). The share of compensation of employees is very slowly increasing whereas the share of rent is slowly decreasing. We also infer from the table that the mixed income of the self employed persons accounts for more than half of the factor income. This reveals the underdeveloped nature of the economy.

In the *organised sector*, the pattern of distribution shows that compensation of employees accounted for a major part of the value added. There is a slight increase in the share of compensation of employees from 66.7 per cent in 1960-61 to 70.8 per cent in 1974-75. The interest on rent show a mixed trend—first increasing and then declining. The share of profit and devidends has declined from 26.2 per cent in 1960-61 to 18.6 per cent in 1974-75. In the unorganised sector, the share of the identified part of compensation of employees is steadily decreasing from 22.4 per cent to 17.7 per cent. On the other hand, the share of the mixed income of the self employed is predominent showing an increase over the period. In the case of the unorganised sector, there is a marked fall in the share of rent in the net domestic product. In the organised sector, the interest share is larger than the rent while the reverse is true for the unorganised sector. Thus, the distribution of factor incomes shows different patterns in the organised and unorganised sectors.

Table 8

This table gives estimates of the share of the public sector in the domestic product at current

TABLE 8.6

DISTRIBUTION OF FACTOR INCOMES

Year	*Compensation of employees*	*Interest*	*Rent*	*Profit and dividends*	*Mixed income of self-employed*
Economy as a whole					
1960-61	33.7	3.2	5.2	6.7	51.2
1965-66	35.4	4.6	4.9	6.8	48.3
1970-71	35.2	4.9	4.0	5.0	50.9
1973-74	33.0	4.6	3.9	4.6	53.9
1974-75	32.9	4.5	3.3	5.4	53.9
Organised Sector					
1960-61	66.7	5.8	1.3	26.2	—
1965-66	67.3	8.1	1.3	23.3	—
1970-71	70.6	10.1	1.8	17.5	—
1973-74	72.1	9.6	1.5	16.8	—
1974-75	70.8	9.1	1.5	18.6	—
Unorganised Sector					
1960-61	22.4	2.3	6.5	—	68.8
1965-66	22.2	3.1	6.4	—	68.2
1970-71	21.3	2.9	4.9	—	70.9
1973-74	18.4	2.7	4.7	—	74.2
1974-75	17.7	2.6	4.0	—	75.7

prices. This information is helpful in understanding the relative placing of the public and private sectors in the economy. It is clear from these figures that the share of the public sector is increasing in the Indian Economy over the period and playing an important role in the growth process of Indian Planning. This increase in government participation in the economic activities of the country is natural and necessary in the initial stages of economic development. Over the period since 1960-61, there has been an increase of more than 5 times in the net product of administrative departments, about 4 times in the case of departmental enterprises, and 18 times in the case of non-departmental enterprises. This is largely due to the setting up of new industries, nationalisation of banks and insurance, merging of various private electricity companies into Electricity Boards under non-departmental enterprises.

In this chapter, we have studied about the computation of the National Income in India. Before independence, all the estimates had been prepared by individual. The assumption of most of these estimators were arbitrary and hence, were devoid of any scientific basis. After independence, the government of India had taken over the responsibility of getting the National Income on a scientific basis. For this purpose, it had appointed a committee about which we have studied. We have seen that after sometime the work of National Income estimates was taken over by the CSO. We have also understood the National Income estimates given out by the CSO in the conventional and revised series. We have further studied the concept of the GNP and other related aggregates in the light of the National Income estimates of India. The growth of the NDP since 1951 to 1976 gave us an idea of the growth of our economy. Finally, we have tried to understand the various tables of the latest White Paper on the National Income.

Exercises

1. Explain the concept of 'National Income' and describe briefly the official method of estimating the National Income in India.
2. Comment upon the growth of the Net Domestic Product in India since the commencement of planning. Indicate the factors which prevented the NDP from growing more rapidly during this period.
3. Give an account of India's NDP by the industry of origin. What changes, if any, do you find in it since 1960-61 to 1975-76?
4. What do you understand from Table No. 1 (Appendix III)? With the help of this table, can you infer something about the level of poverty in India?
5. What do you observe from Table No. 8 (Appendix III) regarding the relative placing of the private and the public sector in India?
6. Do you find any difference in the compensation of employees between the organised and unorganised sectors of the Indian economy, according to Table No. 8.6 ? Give Reasons.

APPENDIX I

ACTIVITIES COVERED UNDER THE VARIOUS SECTORS IN THE REVISED SERIES

1. *Agriculture*

The activities included under this industry group are : (i) growing of field crops, fruits, nuts, seeds and vegetables, (ii) tea, coffee and rubber plantations, (iii) growing of trees on farm yards and village common lands, (iv) agricultural and horticultural services on a fee or contract basis such as harvesting, baling and threshing, husking and shelling, preparation of tobacco for marketing, pest destroying and spraying, pruning, picking, packing, and operating irrigation systems including those operated by the government, (v) rental income from farm buildings and farm machinery and interest on agricultural debt, (vi) breeding and rearing of animals and poultry including private veterinary services, (vii) production of milk and milk products, (viii) slaughter, preparation and dressing of meat, (ix) production of raw hides and skins, eggs, raw wool, honey and silk worm cocoons, and (x) hunting and trapping.

2. *Forestry and Logging*

The activities in forestry and logging include (a) forestry (planting, replanting and conservation of forests, gathering of uncultivated materials, charcoal burning carried out in the forests etc.), and (b) logging (felling and rough cutting of trees, hewing or rough shaping of poles, blocks etc., and transportation of logs up to the permanent lines of transport).

3. *Fishing*

The activities included in this industry relate to commercial and subsistence fishing in (i) ocean, coastal and off-shore waters and gathering of sea weeds, sea shells, pearls, sponges and other ocean and coastal water products, (ii) inland water fishing which include catching, taking and gathering of fish from rivers, irrigation and other canals, lakes, tanks, inundated tracts, etc., and exploitation of uncultivated plant life in inland waters and artificial ponds and (iii) fish curing, e.g., salting and sundrying of fish.

4. *Mining and Quarrying*

The activities covered under this industry comprise 'extraction of minerals which occur in nature as either solids, liquids, or gases; underground and surface mines, quarries and oil wells, with all supplemental operations for dressing and beneficiating ores and crude minerals such as breaking, milling, washing, cleaning, grading etc.' All these activities are covered to the extent that they are carried at the mine site. The production of salt obtained by evaporation has not been included in this industry. Large expenditures on prospecting and boring activities are also excluded from this industry and covered by the 'construction' industry.

5. *Manufacturing*

(a) Large-scale Manufacturing—Registered : The large-scale manufacturing sector covers all manufacturing and processing establishments (called factories) which are registered under the Indian Factories Act, 1948. Establishments registered under the Factories Act but not engaged in manufacturing activities, such as those providing water and sanitary services, recreation services, personal services, and the generation, transmission and distribution of electricity are excluded from the scope of this sector. Similarly the operation of cold storages, which, though classified under 'manufacturing' in the Annual Survey of Industries (ASI) has not been covered here but in trade, storage, hotels and restaurants' industry. Railway workshops, mints and other manufacturing establishments are considered to form a part of the large-scale manufacturing sector.

(b) Small-scale Manufacturing—Unregistered : Small-scale manufacturing covers all manufacturing and processing activities, including repair and maintenance services undertaken by households and non-households and small-scale manufacturing units which are not registered under the Indian Factories Act, 1948. However, the hand-pounding of rice, conversion of sugercane into gur, slaughtering of animals for meat and preparation of milk products (e.g., ghee, dahi, etc. except khoya, ice-cream and chana) are treated as ancillary activities in the agriculture industry.

6. *Construction*

The activities in this industry cover construction, repair and demolition of buildings, highways, streets and culverts, heavy construction of such projects as sewers and water mains, railway road, beds, railroads, piers, tunnels, subways, elevated highways, bridges, viaducts, dams, drainage projects, sanitation projects, aquenducts, irrigation and flood control projects, hydroelectric plants, water power projects, gas mains, pipelines and all other types of heavy construction, marine construction such as dredging under-water-rock removal, pile driving, land draining and reclamation, construction of harbours and waterways, water wells, airports. atheletic fields, golf courses, swimming pools, tennis courts, parking areas, communication systems such as telephone and telegraph lines and all other construction, whether undertaken by private bodies or governmental authorities. It also includes construction, repair and demolition work undertaken as an ancillary activity by the staff and for the use of an enterprise classified in any other industry. Thus, the scope of this industry covers all own account construction activities in addition to the construction activities carried out by special trade contractors such as carpenters, plumbers, plasterers and electricians. Further, the prospecting and boring activities are included in construction whereas the removal of overburden by manual and machine methods is included in the mining and quarrying industry.

7. *Electricity, Gas and Water Supply*

The activities covered in this industry group include (i) generation, transmission and distribution of electric energy, (ii) manufacture of gas in gas works and the distribution of manufactured or natural gas to domestic and industrial consumers, and (iii) collection, purification and distribution of water to domestic and industrial consumers excluding the operation of irrigation systems,

8. *Transport, Storage and Communication*

The activities in this industry group are (i) transport by railways (ii) operation of storage facilities e.g., warehouses (including bonded warehouses), cold storage, furniture repositories and safe deposits, when such storage is offered as an independent service, (iii) communication services rendered by the Posts and Telegraphs Department (P & T) and the Overseas Communications Service (OCS), and (iv) transport by other means, viz. mechanised and non-mechanised road transport, organised and unorganised water transport, air transport, and services incidental to transport. Railway work shops and railway manufacturing establishments like the Chittaranjan Locomotive Works, the Integral Coach Factory, etc., are, however, excluded from railways. Further, the activities of the P & T relating to post office savings bank, cumulative time deposit accounts, national savings certificates and life insurance are also excluded from the communication industry. These activities are included in the large-scale manufacturing sector, and banking and insurance industry group respectively.

9. *Trade, Hotels and Restaurants*

The activities covered by this industry group are (i) wholesale and retail trading including importing and exporting of goods and commodities, auctioneering, hiring out of durable goods and other allied activities, (ii) services rendered by hotels, boarding houses, eating houses, cafes, restaurants, etc.

10. *Banking and Insurance*

This industry group includes banks, the banking department of the RBI, insurance carriers of all kinds and other financial institutions such as stock exchanges. loan, investment, hire purchase, chit-fund and other non-banking financial companies, industrial development and financial corporations, activities of the P & T Department relating to the post office savings bank, cumulative time deposit accounts, national savings certificates and life insurance, and co-operative credit societies (such as primary agricultural and non-agricultural credit societies, grain banks, primary land mortgage banks, Central land mortgage banks, supervisory unions, Central credit societies, industrial cooperative banks, and State Cooperative banks).

11. *Real Estate and Ownership of Dwellings*

The net product from real estate and ownership of dwellings consists of the net rental income accruing from ownership of dwellings and the net product from activities of all types of dealers such as operators, developers and agents connected with real estate. The net rental income from buildings other than dwellings has been included in the net product from various industry groups which use these fixed assets.

12. Public Administration and Defence

The service included in public administration and defence are those rendered by the administrative departments of Central Governments, State Governments, municipal corporations, improvement trusts, municipalities, zila parishads/district and local boards and village panchayats. The expenditure on the administration of various funds (e.g., The Central Road Fund, famine relief fund etc.) and the activities of the issue department of the RBI are also included. However, construction activities undertaken by the government is covered under the industry 'construction', whereas 'education' and 'medical and health services' are included in the industry group of 'other services'. The departmental commercial enterprises of the government such as railways, communication, forests, road transport, electricity, irrigation industries, etc., as also the defence manufacturing establishment, government printing presses and port trusts are included in the appropriate industry groups.

13. Other Services

The range of activities covered in this industry group includes (i) education and research services (ii) medical and health services (iii) religious and other community services, (iv) legal services, (v) business services, (vi) recreation and entertainment services (vii) personal services comprising domestic services, laundry, cleaning and dyeing, barbers and beauty shops and other personal services, (viii) sanitary services (comprising garbage and sewage disposal including the operation of drainage systems), and (ix) services and activities not elsewhere classified.

14. External Transactions

The net factor income from abroad constitutes (i) the net compensation of employees, and (ii) the net property and entrepreneurial income (i.e., interest, dividends and profits) from the rest of the world.

Appendix II

ESTIMATION OF INCOME FROM VARIOUS SECTORS OF THE REVISED SERIES

1. Agriculture, Livestock and Ancillary Activities

(a) Agriculture : The estimates of income from *agriculture* are prepared by following the method of the value added approach. The gross value of 68 agricultural commodities including various by-products are estimated. Out of 68 commodities, for 30 principal crops (viz. Rice, Wheat, Jowar, Bajra, Barley, Maize, Ragi, Small millets, Gram, Tur, Urid, Mung, Masur, Other Pules, Linseed, Sesamum, Groundnut, Rape, Mustard, Castor, Sugarcane, Cotton, Jute, Mesta, Sannhemp, Tobacco, Dry Chillies, Black pepper, Dry ginger, Potato and Turmeric,) detailed data on area and turnout are available from the DESAG (Directorate of Economics and Statistics—Ministry of Food and Agriculture). In respect of 12 minor crops (viz. Coconut, Indigo, Opium, Sweet-Potato, Tapioca, Banana, Cashewnut, Arecanut, Cardamom, Tea, Coffee and Rubber) ad hoc estimates of area and turnout are released by the DESAG. For 3 minor crops (viz. Citrus fruits, Grapes and Mangoes) the data on area are with the DESAG, while yield rates are available in the marketing reports brought out by the Directorate of Marketing and Inspection. In respect of 11 miscellaneous and unspecified crop groups (viz. other cereals, other oilseeds, other sugars, other fibres, other dyes and tanning materials, other drugs and narcotics, other spices and condiments, other fruits and vegetables, fodder, miscellaneous food crops and miscellaneous non-food crops) area figures are available with the DESAG, while estimates of the value per hectare are obtained through scattered sources. For the remaining 12 products and by-products (viz. Gur—indigenous output, straw and stalks, grass, farm-yard, wood bagasse, cotton sticks, sesamum sticks, jute sticks, arhar sticks, rice bran, rice husk and cane trash) too, ratios of yield per hectare obtained from various studies, and ad hoc surveys and the National Sample Survey (Crop cutting survey) are used.

The data on wholesale prices are obtained from the DESAG and State Statistical Bureaus and average prices over peak marketing period weighted in proportion to the district production are used for evaluating the output. An adjustment of 0.35 per cent to the value of output is made to account for under reporting of area. Further, deductions are made from the value of the gross output to allow for lower prices at which food grains are procured by the government, and value added by the rice milling industry. (In the agricultural sector rice and not paddy is evaluated. Hence, the value added by rice milling, which is part of the contribution of manufacturing sector is deducted.)

For arriving at the net output, inputs such as seed, manure, current repairs and maintenance of fixed assets and other operational costs, feed of livestock used on farms, irrigation charges, market charges, electricity, pesticides and insecticides, diesel oil and depreciation are deducted. Estimates of seed, organic manure, feed of livestock are based on the National Sample Survey data and marketing reports of the Directorate of Marketing and Inspection.

(b) Livestock and Ancillary Activities : The value of the output of various *livestock and poultry products* like milk and milk products, meat and meat products, hides and skins, eggs and poultry meat, wool and hair, dung, bones, horns, hoofs, silkworn cocoons and honey is estimated by multiplying the estimated number of livestock by their corresponding yield rates. Information on livestock is available from the quinqennial livestock census, the latest being of 1972. The latest sample surveys conducted by the Animal Husbandry Department of different states provide the data for the yield rates of different livestock and

poultry products. For estimating the net income, the cost of feed of non-service livestock, current repairs and maintenance and depreciation is deducted (arbitrary deduction of 3 per cent for operational cost and 2 per cent for depreciation are made).

In the case of *hunting and trapping* the gross value of output is estimated on the basis of information available from the Ministry of Food and Agriculture, and the Indian Forest Research Institute, Dehradun, on the number of animals killed and the approximate prices of fur. For the net value, arbitrary deductions of 3 per cent for operational cost and 2 per cent for depreciation are made.

2. *Forestry and Logging*

The income from this sector is estimated by following the value added approach. Information on output of *major forest products* viz. timber, round wood, match, pulp wood, fire wood and charcoal wood are available annually in the Indian Forest Statistic brought out of the DESAG. For *minor products* like bamboo, sandal wood etc., the data on their value are available in the form of royalty amounts or the contract fee realised by the government in the Indian Forest Statistics. Some adjustments are made for the unrecorded output of major and minor forest products. The data on wholesale prices are obtained from the State Chief Conservators of Forests. For the net income, deductions are done for expenditure on repairs, maintenance of roads and other assets and other operational costs assumed at 4 per cent of the gross output and allowance for depreciation of fixed assets at one per cent of the gross output are made.

3. *Fishing*

The Estimates of income are prepared by following the value added approach. The data on the quantity of marine fish catch and commercial inland water fish are obtained from the Central Marine Fisheries Research Institute and the State Fisheries Departments. Adjustments for subsistence inland fishing are made on the basis of scattered information available with the State Fisheries Departments. The producer's prices are obtained from the State Fisheries Departments for finding the value of fish output. For estimating the value added by curing, relevant data are obtained from the State Fisheries Departments. In order to determine the net income, deductions on account of repairs, maintenance of boats, nets etc. and other operational costs of 10 per cent of the gross output in the case of marine fish and 6 per cent in the case of inland fish and depreciation of fixed assets at 10 per cent in the case of marine fish and 4 per cent for inland fish are made. For estimating the net output of pearls, chanks, seaweeds etc., per head earnings are applied to the persons engaged in this activity.

4. *Mining and Quarrying*

The value added approach is adopted for estimating income. The data on quantity and value at pit head prices of major minerals are published by the Indian Bureau of Mines in the Indian Mineral Year Book and the Monthly Bulletin of Mineral Statistics and Information. For minor minerals, the data are obtained from the Indian Bureau of Mines as well as the State Departments of Geology and Mining. The data on output of crude petroleum are obtained from the Ministry of Petroleum and Chemicals. For deriving the net income, the ratios of output to input are used.

5. *Manufacturing*

(a) Registered: This sector covers manufacturing and processing activities of the factories registered under the Indian Factories Act, 1948. To estimate the annual income of all industries, which are covered in this sub-sector are classified in 20 industrial groups. Then the relevant data on the gross value added by the manufacture of each industrial group are made available by the Annual Survey of Industries. The estimates of the net value added are derived by deducting the consumption of fixed capital, that is, depreciation from the gross value added. In certain industries where data regarding the output are not available, it is computed on the basis of data on employment.

(b) Unregistered: The income from this sector is estimated by the income approach. For estimation purposes, this sector is sub-divided into two subsectors, viz. *household manufacturing* and *non-household small scale manufacturing*. The estimates of the gross product in both the sub-sectors are prepared separately for seven broad industrial groups (viz. textiles, tailoring and leather footwear, leather and leather products except leather footwear; wood, glassstone and ceramics; metal manufacturing and engineering; chemicals and chemical products; food drink and tobacco; and other industries). For estimating the value of output, the working population in each of the sub-sectors is estimated with the help of population census data and the gross product per worker is also computed on the basis of income received by workers corresponding to each sub-

sector. Then by multiplying the two, the gross product per worker by the number of persons engaged in that sub-sector, the value of output is estimated for both the sub-sectors. The National Sample Surveys provide the necessary information for computing the gross product per worker in the household manufacturing sector. For the non-household manufacturing industries, the estimates of the gross product per worker are derived from the various surveys conducted by different organisations, viz. the Research Programme Committee, the Central Small Industries Organisation, the State Statistical Bureau, etc. In order to arrive at the net product, an allowance for depreciation of fixed assets is required to be made. Deduction of 2.5 per cent of total fixed capital employed in the household sub-sector of small scale manufacturing sector, are made for depreciation.

6. *Construction*

Estimates of income are prepared by both commodity flow and expenditure methods. The commodity flow method is used for urban constructions and the expenditure method is used for rural construction. In the commodity flow approach, estimates of domestic production of commodities used in construction are prepared and these are adjusted for change in stocks, imports and exports. To arrive at the value of these commodities at construction sites, further adjustments for trade and transport margins, taxes, etc., are made. The data on factory output and stocks of cement, iron and steel, timber, bricks tiles, fixtures, fittings and other items used in construction are available from the reports of the Annual Survey of Industries and the reports of the Directorate General of Technical Development. Information regarding exports, and import duties are obtained from the Monthly Statistics of the Foreign Trade of India and Customs and Excise Revenue Statement of the Indian Union. Information regarding trade, transport and other charges are gathered from a large number of dealers. The value of material is then assumed to be two-third of the total value of construction and the gross product from construction activity, therefore is assumed to form only *one-third* of the value of construction. In the case of land improvements undertaken by rural and urban households, 90 per cent of the part of expenditure and 50 per cent of the value of repairs in respect of rural residential and non-residential buildings not covered by the commodity flow method, has been assumed to represent the gross product. The estimates of depriciation are based on the analysis of the accounts of various companies engaged in construction.

7. *Electricity, Gas and Water Supply*

For *electricity*, the estimates of the gross product comprising compensation to employees, interest, rent, depreciation and operating surplus are framed making use of accounts of various electricity undertakings boards. In respect of *gas* the estimates of the average annual earnings and an allowance for depreciation per worker are built up on the basis of accounts of gas companies. For *water supply* the estimates of compensation of employees income from entrepreneureship and depreciation are prepared. The number of workers is ascertained from the census data compiled by the Directorate General of Employment and Training and the data collected from municipal corporation and municipalities with populations above 50,000. Estimates of operating surplus, depreciation and interest are framed on the basis of the data of the Annual Survey of Industries. The indicators used for gas and water supply are the quantity of gas sold and the number of workers respectively.

8. *Transport, Storage and Communication*

(a) Railways : Various components of the gross product such as compensation of employees, interest and operating surplus as well as allowance for depreciation are ascertained from the annual reports of the Railway Board and the budget publication of the Central Government for railways.

(b) Transport by other means and Storage : The estimates of the gross and the net product *from air transport* are derived from the annual accounts of the air transport corporation, private non-scheduled operators, flying clubs and gliding clubs. To these estimates of compensation of aerodromes and air route services ascertained from the Central Government budgets are added.

Estimates are prepared separately for *mechanised road transport* and *non-mechanised road transport*. So far as mechanised road transport is concerned, the estimates of the gross product for the public sector are derived from the accounts of the departmental and non departmental undertakings. The total working force engaged in mechanised road transport is ascertained from the census data. Employment in public sector is obtained from the DGET and the corresponding employment in the private sector is obtained as a residual. For the private sector, the same gross product per worker in the public sector is assumed. Estimates of gross product of non-mechadity flow and expenditure methods. The commodity flow method is used for urban constructions and the expenditure method is used for rural construction. In the commodity flow approach, estimates of domestic production of commodities used in construction are prepared and these are adjusted for change in stocks, imports and exports. To arrive at the value of these commodities at construction sites, further adjustments for trade and transport margins, taxes, etc., are made. The data on factory output and stocks of cement, iron and steel, timber, bricks tiles, fixtures, fittings and other items used in construction are available from the reports of the Annual Survey of Industries and the reports of the Directorate General of Technical Development. Information regarding exports, and import duties are obtained from the Monthly Statistics of the Foreign Trade of India and Customs and Excise Revenue Statement of the Indian Union. Information regarding trade, transport and other charges are gathered from a large number of dealers. The value of material is then assumed to be two-third of the total value of construction and the gross product from construction activity, therefore is assumed to form only *one-third* of the value of construction. In the case of land improvements undertaken by rural and urban households, 90 per cent of the part of expenditure and 50 per cent of the value of repairs in respect of rural residential and non-resident~~ial~~ buildings not covered by the commodity flow method, has been assumed to represent the gross product. The estimates of depriciation are based on the analysis of the accounts of and water supply are the quantity of gas sold and the number of workers respectively.

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A. P. GOYAL

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FOREWORD

This book follows the approach taken by the Council in developing a curriculum for Classes XI and XII.

An Editorial Board in Economics for the higher secondary stage was constituted under the chairmanship of Prof. G.S. Bhalla. The Editorial Board devoted considerable time in developing the syllabi in economics for these classes and then to the preparation of two manuscripts on the same for Class XI.

Our thanks are due to Prof. G.S. Bhalla and his colleagues—Dr. H.K. Manmohan Singh, Dr. V.B. Singh, Dr. C.T. Kurian and others—for this work.

Our thanks are due to Shri K.S. Reddy and Shri A.P. Goyal for writing this book for us in a very short time. Our thanks are also due to Shri Sudarshan Kumar Kapur of the State Institute of Education, Haryana, for rendering this book into Hindi within a very short time.

The preparation of curriculum and textbooks calls for considerable expertise and effort in planning the work; screening, reviewing and editing the book, and, finally, seeing it through the press. For all this, I am grateful to my colleagues—Shri Ramesh Chandra and Shri D.P. Jain from the Department of Education in Social Sciences and Humanities. The book would not have seen the light of the day in its present form but for the sustained work of Shri Ramesh Chandra.

Curriculum construction and development of instructional materials is an on-going process and hence every suggestion from teachers in the light of their experience would be most welcome. These suggetions would be taken into account while bringing out the revised version of this book.

SHIB K. MITRA
Director
National Council of
Educational Research and Training

New Delhi
26 May 1978

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